HYGEIA

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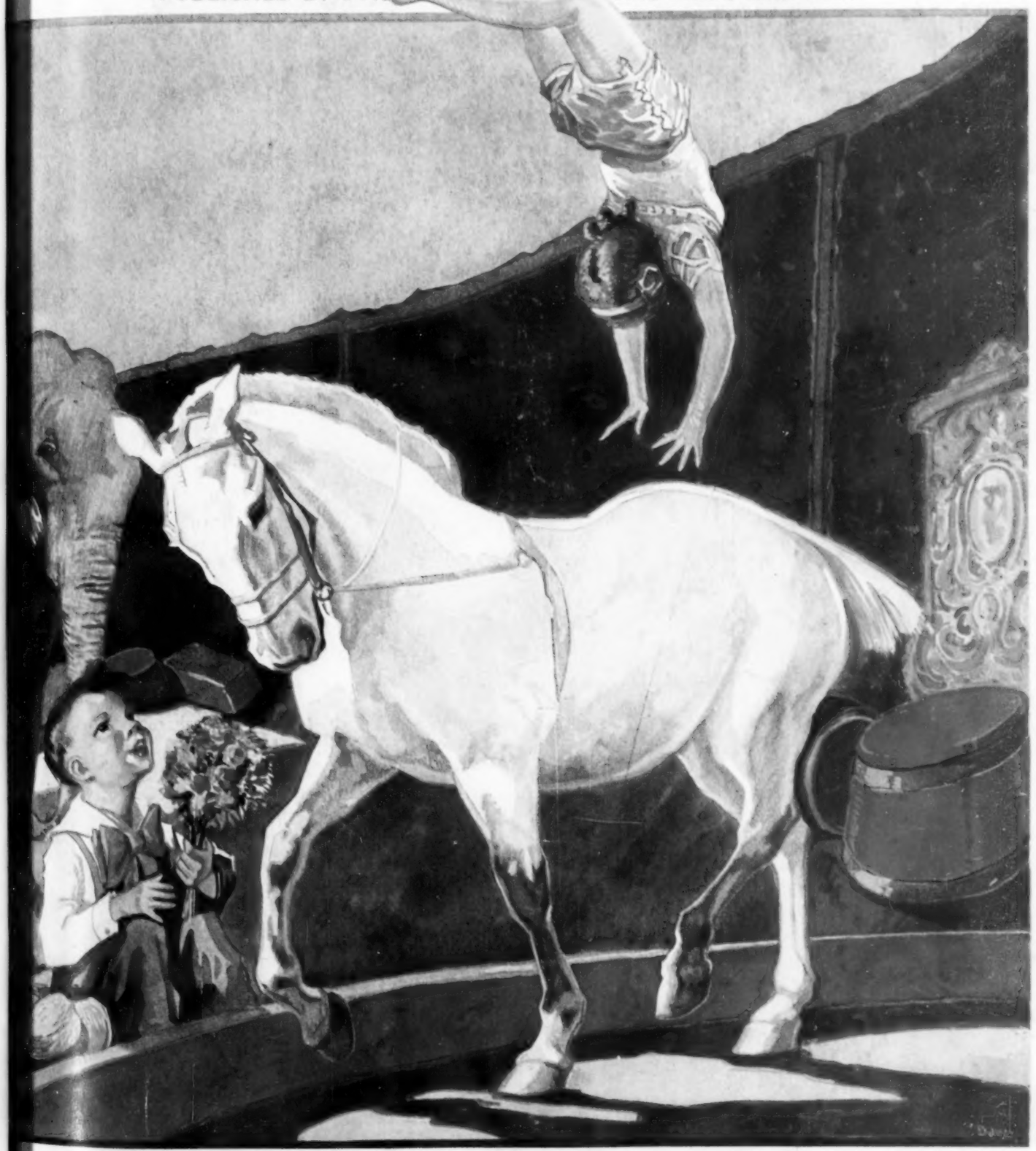
The HEALTH MAGAZINE

PUBLISHED BY THE [illegible] MEDICAL ASSOCIATION



August, 1932

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25 Cents

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Mellin's Food ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods **A Milk Modifier**

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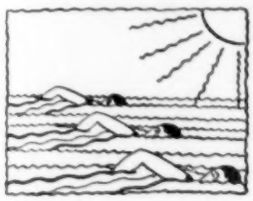

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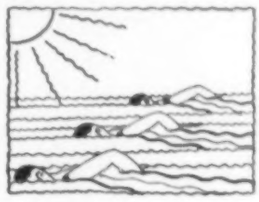

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Contributors to This Issue

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In "Are You Afraid, Too?" MARIAN CASTLE presents a sympathetic and reassuring article on cancer. . . . MISS E. M. GERAGHTY contributes an enlightening article on "Fruits." . . . How Wilhelm Konrad Roentgen discovered the x-rays is told by DR. CLAUDE LILLINGSTON.

DR. RACHEL ASH, an eastern pediatrician, explains the need of the preschool health examination. . . . Further anecdotes and incidents connecting Lincoln with the doctors of his day are related by DR. MILTON H. SHUTES. . . . LOUISE PRICE BELL tells what the "job of being a parent" entails.

ERNEST W. STEEL is professor of municipal and sanitary engineering at the Agricultural and Mechanical College of Texas. . . . MEL WHARTON contributes an interestingly detailed description of "Olympic Village—the Answer to an Athlete's Prayer." . . . The benefits of the hourly nursing service are portrayed by DOROTHY DEMING, R.N.

SOLON R. BARBER is in charge of the information service for the Food and Drugs Administration of the U. S. Department of Agriculture. . . . The story of the Wills Hospital is told by MADELIN BLITZSTEIN.

With "This Business of Blood Pressure," DR. ROBERT A. KILDUFFE concludes his series of articles on diseases of the blood. . . . The polygraph, described by LEONARDE KEELER, a member of the staff of the Scientific Crime Detection Laboratory, is one of the recently developed adjuncts of scientific crime detection. . . . Little Jumbo is introduced by NELLIE G. HERRIMAN in another of the adventures of Snickles and Snortles.

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The Doctor in Fiction and in the Movies

An Editorial

RECENT months have seen a cycle of motion pictures based largely on what was assumed to be the life and work of a physician. "Arrowsmith," which no doubt gave rise to this cycle, portrayed the investigator in his laboratory and in the combat against plague in the tropics. Fannie Hurst's "Symphony of Six Million" revealed a surgeon in dispensary practice on the east side of New York and later as a Park Avenue specialist catering to neurotic women. Other pictures have shown doctors as plastic surgeons, doctors who conducted fake sanatoriums and doctors indeed of every variety.

LATELY the movies have been far more accurate in portrayal of medical scenes than in an earlier day. The time has not long passed since the "movie" surgeon, called to attend an emergency, unrolled his gauze on the grass and wrapped the patient's limb with a view to revealing the limb rather than for the purpose of scientific bandaging.

OPERATIVE scenes of an earlier day were mostly hidden from the observer, whereas the present technic of an operating amphitheater in a movie is realistic to the point of perfect asepsis. The stage managers have not yet reached the point of revealing the making of an incision. Thus far, obstetric scenes in motion pictures for the public have been limited to the head of the patient and to the father walking up and down the corridor. Not yet do motion pictures take the observers into the sanctum of the delivery room. It may as well be realized that the primary reason for medical motion pictures is entertainment and that so far as medical education is concerned, the movie plays but a small part.

THE MEDICAL fiction of our modern day is far more likely to run true to form than is the motion picture, primarily because much medical fiction of these days is written by medical men. "Hatter's Castle" and "Three Loves" by Cronin are true to life because Dr. Cronin practiced among the miners in England before he turned to fiction as an occupation. Helen Ashton, who wrote "Dr. Serocold," is a daughter of a physician; Francis Brett Young, Somerset Maugham and Warwick Deeping among modern Englishmen, and Lever, Smollett and Goldsmith, in an earlier day, had good medical training. As far as the American portrayal of the physician is concerned, Sinclair Lewis is himself the son of a physician and he has a brother in active practice. Among writers of mystery tales, Conan Doyle and R. Austin Freeman are conspicuous examples.

RECENT publications, such as "The Intern" and similar realistic novels, have been inclined to depict the sensational aspects of a medical career rather than to reveal the drudgery, monotony, travail and not infrequently the distress that accompany general practice in some portions of our country. Since many persons are liable to believe that the medical practice shown in the movies and occasionally revealed in fiction is a true picture of medical life, it may be desirable to point out that this is seldom the case. The old-time practitioner had a life more likely to be associated with romance than that of the physician today. The coming of the hospital, the research laboratory and the development of exceedingly scientific methods of diagnosis and treatment have no doubt removed from the medical career much of its adventure.

MISHAPS on the TOURIST TRAIL

By

Curtis Billings

VACATION touring is one of the prime joys of uncounted thousands of American families each year. Niagara Falls, Yellowstone Park, the California coast, Chicago, New Mexico and the old South are visited by young and old, rich and poor who annually take advantage of those two great modern gifts, the automobile and good roads. The precious fortnight affords a complete escape from workaday routine, from home, office and shop. It is given over to new sensations and sights and to the age-old delight of following a road which leads romantically into the horizon.

It is well, however, to sound a few notes of caution to the army of carefree nomads—not in order to circumscribe their pleasures but to assure them the happiness of which they have dreamed for twelve whole months. Too many of these vacations are ruined by accidents.

Don't let an accident spoil your tour this summer! How can it be avoided? That is easy to learn. The prevention of accidents on a trip will require little more planning and almost no more equipment than one ordinarily provides. Forethought—not as much as Commander Byrd used in taking forty men to the Antarctic for two years without a serious accident but just a little of the same kind—will make the trip a success. Did it ever occur to you that the men who court the greatest dangers are first of all expert at foreseeing and eliminating possible accidents? Charles Lindbergh's great flight was by no means luck.

While the knock is being removed from the engine of your car, ask the garageman to reline the brakes, check the steering mechanism carefully and inspect the lights, front and rear. These are small but vital jobs. Indeed, the lights, brakes and steering gear comprise the "Achilles heel" of the automobile. It is a good plan also to be supplied with an extra set of lamp bulbs and, if the tires are worn smooth, to change to a new set before leaving rather than to wait until the return. A blowout at a fast clip has put many a touring family into the ditch or, even worse, into the path of an approaching machine.

It is a sound idea also to establish a rule against cluttering the windshield and rear window with stickers and pennants. If you want the world to know that it is "the coast or bust," hang the sign where it will not obscure the vision of the driver. This slogan—the coast or bust—gives reason to pause. Too many tourists try to cover more territory than their time will permit at any reasonable rate of travel. They go so fast that they do not have an opportunity to enjoy themselves. It is better to have a good

time going only a thousand miles during a vacation than to be tired and fretful while making perhaps three times that distance. After all, the vacation is presumed to be a change, a healthful rest and an escape from hurry and bustle; so do not schedule yourself 500 or 600 miles a day! Speed and frayed nerves often spell disaster.

If this is to be a camping vacation, living in the open and pitching a tent every night will afford a double reason for the purchase of one extra piece of equipment, a small fire extinguisher, which would save the car if it caught on fire and certainly would enable one to put out handily a blaze which might start from a camp-fire. This brings to mind other important items that must not be forgotten—the sheaths for the hatchet and knives, the box for fishing tackle, and (especially if there are children in the party) a locked container for the guns and ammunition. But why not leave the firearms at home? They usually are not worth the hazard they present; however, do not forget the mosquito netting and the rain clothes. It is possible to avoid accidents of any kind, even "accidental" bites and colds on this tour.

Indeed, you should be not only prepared to prevent accidents and illnesses, but equipped to treat them should they occur to members of the party or to others whom you may meet on the road or at night in camp. You doubtless will meet some tourists in distress who have not wisely planned their journey. Welcome the opportunity to help them, and the knowledge that you acquire for this purpose will stand you in good stead all through life.

Every one should be able to recognize and relieve common ailments. One evening before the start, therefore, gather in the living-room and, with a good first aid book for guidance, make sure that you know what to do in case of the following: sunstroke, heat prostration, poisoning, fractures, burns, scalds, dog bites, snake bites, spider and insect bites, frost bites, drowning, shock, bleeding, suffocation, fainting and fits. Know what to do if foreign bodies or insects become lodged in the eye, ear, nose or throat. This knowledge of first aid will impress one important fact on you: In many of the exigencies which may occur you must be content only to make the patient comfortable while you wait for the ministrations of a competent physician. There are three standard ways to call a physician out into the country: one may go to a farmhouse and telephone the nearest town, or hail the first motorist who passes and ask him to dispatch a doctor back, or send a member of the party for the doctor.

The first aid kit should be complete but should not contain a lot of materials which the camper does not know how to use. An important item is the first aid book with which one should be familiar in advance, but which should be carried for reference. The kit may contain no more than the following: sterile compresses, 2-inch gauze bandage, adhesive plaster, burn ointment, iodine or mercurochrome, aromatic spirits of ammonia, sodium bicarbonate, safety pins, scissors and first aid handbook. For small wounds the new patented compress and adhesive tape is recommended.

Loading the duffel into the car is a particular task if every one is to be comfortable and safe. In the first place each person must have room to stretch his legs; one can become extremely stiff and tired sitting in a cramped position all day long. The driver, especially, needs freedom of arm, of leg and of eye. The baggage must not obstruct his clear vision in any direction. It should not make "prisoners" of the passengers, for in case of an accident, they should be able to open a door and get out. Lastly, the equipment on the running board and on the carrier behind should not protrude from the sides of the car and invite a crash with a bridge head or another machine. The tourist who carries his duffel in a trailer must be particularly watchful.

Before starting, the driver should remind himself of a few simple but often disregarded rules of the road. In the tour he will be confused many times by the sad lack of uniformity in signs, signals and traffic rules in the cities and states through which he passes, but there are certain fundamentals that can always be observed with safety.

In driving slowly, stay in the outside traffic lane; the inside lane of four-lane highways is reserved for faster travel. When traffic is heavy, stay in line. Collisions when one is cutting around are usually serious because one speeds up to get ahead. Highly important is the matter of proper spacing. Keep a safe distance from other cars. The driver ahead may have to stop suddenly, and while your brakes may be satisfactory, his may be perfect!

Turn right from the right lane and left from the lane nearest center in order not to cut across the path of traffic moving in your direction. (In only one or two large cities are left turns made from the right lane and here special signs warn the unsuspecting visitor of the unusual rule.) Never attempt to pass another car on a curve or hill. This is one of the worst traffic crimes, because if an unseen car is coming, all three vehicles may pile up in a tragic heap. Railroad grade crossings must be negotiated with care. Amateur drivers can take a lesson from the professional bus operator who prefers to "stop, look, listen—and live."

As a matter of common sense, observe all signs and signals even if they do not seem as expedient as those at home. The tourist who "knows he can get away with it because of his foreign license" may find that he takes liberties to his own sorrow.

In driving through strange country it is a good plan to drive at such a speed that all directional signs can be read in passing. Too many times, tourists wonder what appeared on a certain sign, past which they have sped, and, without warning, stop abruptly in the center of the road and prepare to back up and have another look. This is extremely dangerous. Never stop, or turn, or pull into a lane of traffic from the curb or the side of the road without informing traffic of your intentions. Know what you are going to do when you signal. The other fellow has a right to assume that you know your business. And do not forget that your brakes will stand only a certain amount of punishment. Never stop suddenly except in an emergency.

If it is necessary to change drivers or to stop to change a tire, park off the pavement. At night, dim your lights when meeting another car; this act of politeness is just as important to your safety as it is to the safety of the oncoming motorist.

Mountain driving presents new problems to the tourist from the plains. He is tempted to throw his machine out of gear and depend on his brakes in traveling down grade. This is foolish and sometimes fatal. The car should always be in gear, and the steeper the slope, the lower the gear, so that the engine which makes it possible for you to climb the mountain will, by its compression, "brake" you safely down.

Speed is a major cause if not the major cause of auto accidents. Drivers need to develop a sense of "relativity" regarding speed. Forty miles an hour on a lightly traveled country road may be safe under some conditions but dangerous under others. At 40 miles, a car is traveling at the rate of 58½ feet a second and has the same destructive force as it would have if it were to fall from the top of a building 54 feet high! Depend on common sense rather than on the speedometer, and slow down while going through small towns and past schools. It is easy to forget and dart through a village at a dangerously high rate of speed. Always expect the child to do the unexpected thing. Children on the curb are a signal to be careful.

Give the road hog all the room he wants. It does not pay to question his right to more than his share of the highway. A good driver drives three cars all the time—his own, the one ahead and the one that is coming. He attempts to anticipate every move that the quixotic "other fellow" may make.

If one uses ordinary caution, stopping for lunch will offer few difficulties. One should not, by the way, stop at 11 a. m. or at 2 p. m. for lunch, and the food should not consist of a hot dog, candy bar and bottle of pop purchased on the run at a roadside stand. Eat regular meals

at regular mealtime for the simple reason that you want to keep well and enjoy your vacation. It is often more necessary to be careful about the diet on tour than at home, because riding does not provide much exercise. Plenty of fresh vegetables, fruit and milk should be supplied for every one and especially for the children. At noon, pick out a pleasant place along the road and pile out for a bit of relaxation as well as for lunch. Take a full hour for it. Your only precaution need be to park the car on the side of the road on which you eat. You do not want the children running across the highway to the car and back again. Of course, the car should be parked off the pavement. Dispose of all rubbish carefully so that the site will be as attractive for the next tourist family that comes along as it was for you.

One of the surest ways to distinguish the experienced camper from the novice is that the novice is forever taking unnecessary chances. He may mean well, and if luck is with him he may not do himself or any one else any serious damage, but if it is not, look out. He may blow up the camp. That is one reason why foreknowledge is perhaps more necessary in camping than in any other sport. The "duffer" at tennis or golf merely looks awkward but in camping, his antics can cause all degrees of difficulty from a slight scratch to death. There is this to say, however, for camping: It calls for no nice technic requiring years to master. Common sense will take the novice camper a long way safely.

The matter of building and using a campfire exemplifies this. The experienced tourist camper takes the following precautions:

1. He saves wax paper from loaves of bread and other groceries to start the fire.
2. He builds a small fire so that he can get close enough to cook.
3. He completely smothers the fire with dirt or drowns it with water before he breaks camp.

For general use, experienced campers have found that the gasoline stove is more practical than the open fire. The experienced camper carries his supply of gasoline in a small strong can instead of running the risk of taking it from the tank of the car every day. On long trips an auxiliary supply of fuel often proves a boon. It is always the duffer who handles gasoline with a lighted cigaret in his mouth, and it is the duffer who tosses cigaret or cigar butts into the woods or grass along the road. The experienced camper stamps them out before throwing them away.

Similarly the practiced camper will not take any chances on the food he eats or the water he drinks. The crystal-clear brook in the woods is not necessarily a safe place from which to drink; for all its beauty, it may flow directly from a farm on which there are tubercular cattle or may carry other dangerous germs. If the "old hand" questions the water supply, he boils it before permitting the family to have it. To restore its freshness he whips it or pours it from one vessel to another. He buys fresh foods in small quantities because, without refrigeration, they will not keep. Either he knows mushrooms beyond the shadow of a doubt or he has none of them.

Experience teaches many things. The duffer, thinking that a better place will surely turn up around the next bend or beyond the next town, finds himself selecting a camp site after dark. A half-pitched tent in a bog and a dinner consisting of "left-overs" from lunch are his lot. The expert sets a deadline for himself—usually about 5 o'clock—and after that time selects the first likely looking place he sees.

Exploring the woods and fields about camp is one of the chief pleasures of a tourist from the city. Every member of the family should be able to recognize at once nettles, poison ivy, poison oak and poison sumac. If you are doubtful about berries, do not eat them. And do not be the destructive kind of duffer who kills every snake he sees; the best advice is to let snakes alone. The poisonous varieties are, of course, dangerous, but nonpoisonous snakes are worth their weight in gold every season to the farmer for their zeal in devouring harmful field rodents.

Cooking in the open presents its own hazards. Too many happy tours are terminated suddenly by grease burns and scalds. It is best not to let the children carry hot coffee and water. Above all, do not set vessels full of hot food and liquids where, if they spill, some one will be the victim. A pot of boiling coffee resting precariously on a rock or log is a dangerous thing. More care, not less, is needed in camp than in the well ordered and equipped kitchen. If it is necessary to cut bread with a paring knife or peel potatoes with a butcher knife, do it without injury to any one. Let your head guide your hands.

Camp furniture may be old, but it must be sturdy and safe. Severe injury can be caused by a chair that collapses under one's weight. As a matter of fact, thousands of injuries and deaths are brought about in this country every year by falls from faulty furniture.

A little sandpaper and a few minutes of work will remove the slivers from the rough ax handle. If the ax head is loose, soak the ax over night in water, and the swelling wood will make it tight and safe to use. In using any sharp instrument, cut away from the body so that in case of a slip you will not be harmed. Before pitching a tent, find a windbreak and study the ground. In case of a storm it is rather unpleasant to have the tent carried away by the wind or flooded by ground water.

Water sports are among the finest, and a good swim at the end of the day's journey is worth a king's ransom. Beware of currents in rivers, undertow in the ocean and the Great Lakes, and

clutching weeds and uncertain depths in inland lakes. Diving into water the depth of which is not known to you is the most errant folly. It is scarcely necessary to mention the fool who rocks the boat. On an unguarded beach, at least one member of the bathing party should swim well and know practical life-saving methods, and every member should be able to administer the prone pressure method of resuscitation. Excellent handbooks on water safety are available at any library or book store.

Preparing for a summer camping tour that is to be both happy and safe should be one of the educational advantages of the trip. The knowledge gained will always be practical and as useful at home as in the woods.

Pity the poor duffer: He tries to acquire a deep tan in one day and suffers the tortures of the damned for two weeks. Be a good camper and bring your family home happy and safe, eagerly looking forward to the next opportunity to follow the gasoline trail.

Swimmers' Safety Pledge

A SWIMMER'S safety pledge has been formulated by Marie Wait Bishop, teacher in charge of swimming instruction of the public schools in New York City, which sets a valuable standard for swimmers and non-swimmers. The fifteen points as they are enumerated in *Safety Education* follow:

1. I shall wait two hours after eating before I go in swimming.

2. I shall swim only when accompanied by at least one person. I shall swim distance only when accompanied by a boat.

3. Before diving in a strange place, I shall inquire, or find out for myself, whether the water is deep enough for diving, and whether there are dangerous stumps or rocks on which I might be hurt. I shall look before I dive to see whether there is some one I might hurt by diving.

4. I know that I do not belong in deep water unless I can change from a vertical to a horizontal position in deep water. This means that I must know either how to level off after a straight jump into deep water, or how to tread water. I must also know how to float, how to turn around and how to swim on my back as well as on my stomach or on my side.

5. I shall remember that if I swim out into deep water, I must return the same distance and that I shall be more tired coming back than when I started.

6. I shall not try to swim against a current, but with it, and at the same time toward shore. If caught in an undertow while ocean bathing, I shall swim diagonally across it toward shore.

7. I shall keep my hands off my neighbor while in deep water.

8. I shall not call for help in fun, or pretend that I need help if I do not.

9. I shall be my own lifeguard. I shall not depend much on a man whose job it is to watch hundreds of people at a time, and who, himself, has definite limitations. I know that if I were to sink in water over 20 feet deep, it is not likely that the life saver could recover me through a surface dive, and that the only hope for me would be the grappling irons, the use of which would take so much time—if this equipment was at hand—that my chances would be slim.

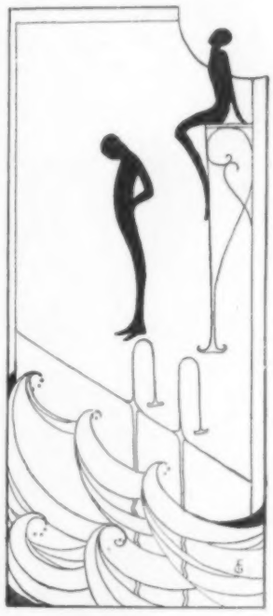
10. If I get in trouble, I shall keep a cool head, tread, float, scull or kick slowly, keeping my hands underneath the water and think out while thus resting what it is best for me to do.

11. I know that I have no business in a boat unless I can swim. If I get into a boat, I shall step directly into the center of it, sit down and remain seated. If a boat I am in capsizes, I shall swim to the boat and stay with it.

12. I shall take care not to get badly sunburned the first day I go to the beach, but to acquire a gradual tan.

13. I shall wear something white somewhere on my suit, both front and back, and a white bathing cap.

14. If it is necessary for me to remove my clothing while in deep water, I shall assume a jelly-fish float position, lifting my head for air when necessary, and remove my shoes first and then the rest of my clothing, leaving on any articles of clothing which are filled with air, and therefore are helping me to float.

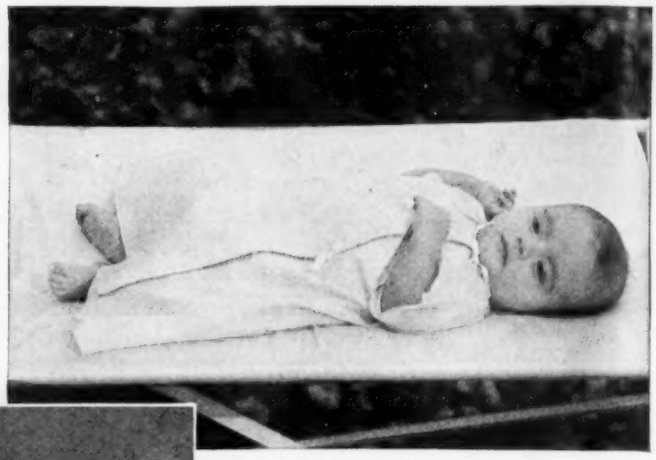


15. I shall take advantage of my opportunity to pass on this information and as soon as I am able to do so, I shall study life-saving methods and become familiar with them.

New Clothes for Baby

By

MARGARET SMITH



A BABY'S clothing has a direct relation to his comfort and health. Much has been said about the weight and amount of clothing which a baby should wear, both in winter and in summer, but little attention has been paid to the designs of the garments. This means that mothers are, as a rule, left to work out this problem alone.

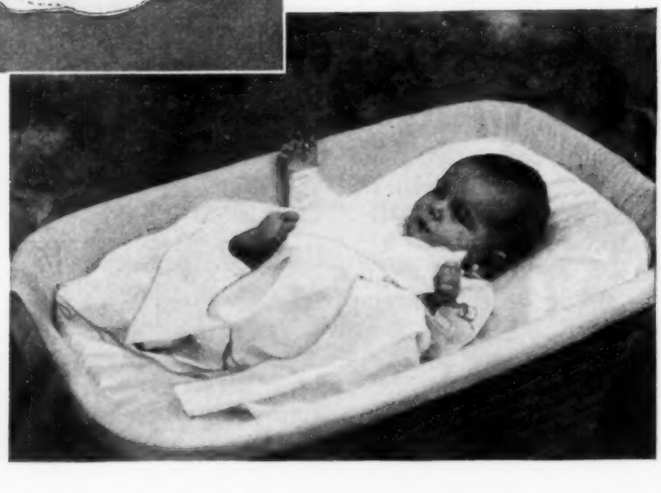
Possibly the reason for this seeming neglect of suitable designs for infants' wear is that baby clothing has been thought of in terms of warmth alone. Although maintenance of normal body temperature is one of the chief purposes of a baby's clothes, it is also important that they are designed so as to permit free activity of all parts of the body. An infant gets most of his exercise by kicking and arm movement; anything that hampers these activities also hampers normal development.

Fig. 1

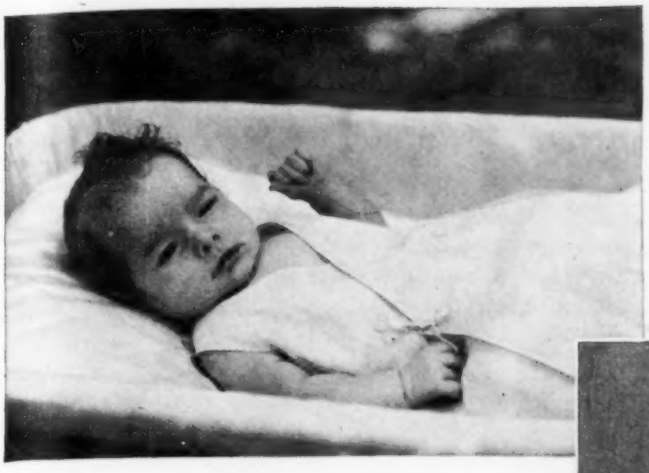
Fig. 2

Realizing this need for designs better suited to infants' requirements, the U. S. Bureau of Home Economics made an experimental study and developed several designs which, when made up in suitable materials, provide both comfort for the baby and convenience for the mother. These characteristics go hand in hand, for unless a design permits easy quick dressing and the material is easy to launder, no garment can be wholly comfortable for a young infant.

A dress that unites practicality with attractive design is shown in figure 1. It is cut on the bias, rather than, as is customary, on a long fold of the material; this method of cutting—a new feature in infants' wear—makes gathered fulness unnecessary. The dress is neat and straight in appearance, yet it will readily stretch either lengthwise or crosswise as the baby's movements demand. The raglan sleeves, also cut on the bias, are comfortable, durable and not likely to tear at the underarm seam as do kimono styles.



Another desirable feature of this new bias dress is the full-length front opening. It may be pushed apart for



greater freedom during the kicking and stretching hour, while at more restful times a generous lap of several inches affords adequate protection. Garments of this type tend toward convenient dressing as they may be opened out on a flat surface, and the baby may be placed on them and dressed quickly and easily. A tie at each side of the neck and another at the left side keep the dress adjusted across the front. At the neck a yoke effect is formed by cutting the right front an inch or more lower than the left. This does away with extra material under the chin and adds to the attractive appearance of the garment. All the fastenings are ties made by sewing 12-inch lengths of narrow twistless tape at the center to the left front of the dress. On the right front, crocheted or buttonholed loops are made, and through these the tapes are tied. Tapes can be put through loops easily if the ends are turned back half an inch and wound solidly with soft embroidery thread, but there must be an occasional stitch to make these reinforcements secure. When tinted to match the trimmings or color of the garment, tapes assume the appearance of ribbons, but there is the added advantage of durability and easy laundering.

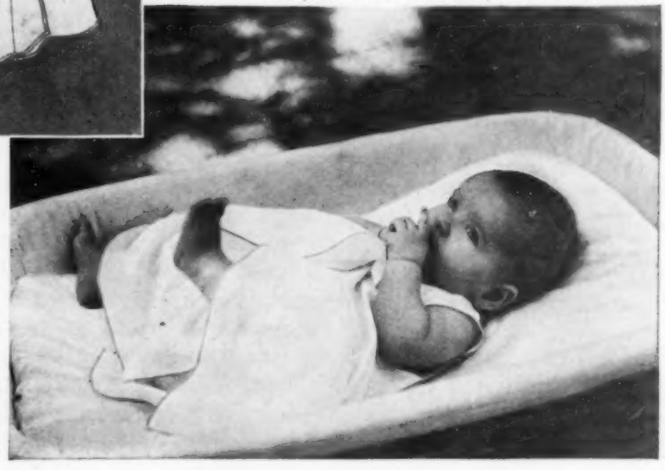
Fig. 4

A dress made on the straight of the material will not stretch as a bias one does; for this reason it must have actual fulness to supply the room needed for growth and unrestricted movement. However, the designs may be equally practical and attractive, as the dress illustrated in figure 2 shows. Fulness is provided by several rows of shirring at the neck; this shirring flattens the folds, which might otherwise bunch up about the face, and forms a simulated yoke. Decorative embroidery in pastel color strengthens the shirring and adds to the appearance of the dress. Around the neck, sleeves and lower edges of the garment, narrow bias binding repeats the color of the embroidery; it also trims and emphasizes the diagonal line of the full-length side opening. Raglan sleeves fashioned loose for convenient dressing and ironing are short or long as desired. If long, they may be confined loosely at the wrists by tapes which tie in small bows. To keep them from slipping over the hand and also from getting into the baby's mouth, the tapes are drawn through two crocheted or embroidered loops spaced about 1 inch apart at the back of the sleeve.

Fig. 3

A slip which may serve also as a dress on days when little protection is needed is shown in figure 3. The low neckline and deep armholes are comfortable for any use to which the garment is put. The full-length front opening is double-breasted to provide adequate protection, freedom for activity and convenience for dressing. This garment ties at both sides of the front. Figure 4 shows another design which ties at both sides of the low-cut neckline. Both slips are cut on the bias. Like the dress, they allow sufficient room for activity and growth, even though there is no actual gathered fulness.

Photos from U. S. Bureau of Home Economics



Other desirable features of these slips are the ease with which they can be made and the small amount of material required. The pattern is in one piece, with no seams except those on the shoulders. Two slips can be cut from slightly more material than is required for one of the usual type made lengthwise.

Fine soft materials and simple dainty trimmings are most suitable for the well dressed baby. Pastel colors in nainsook or batiste are becoming, and when finished with delicate embroidery or contrasting binding they are extremely effective. Trimming should be attractive, durable, and nonirritating to the baby's skin. A shell edge such as is used on the garment illustrated in figure 3 is an effective and practical finish for infants' garments; rolled hems or narrow bindings are also distinctive and are easily made. When dresses and slips are made to match in color and finish, the result is a pleasing ensemble which is practical, easily adjusted to changes in temperature and sure to please even the most exacting and meticulous infant.

Brief Healthgrams *from Articles in This Issue*

¶Common top-water minnows placed in the ornamental pool in the spring are the best patrollers for keeping the pool free from pestiferous and malaria-carrying mosquitoes.
See page 719

¶"Even the most devoted mother may not notice any modification in the health of a child, whereas the trained eye of a physician may detect a pallor that should not exist, an expression of fatigue, a slight stoop of the shoulders and protrusion of the abdomen, or an early flatfoot in a stage at which correction is simple."
See page 710

¶The hourly visiting nurse, sent out by the Nurses' Registry or the Visiting Nurse Association, is a real helper to the patient who is not sick enough to need expensive hospital care yet who is sick enough to need correct nursing and adequate fulfilment of the doctor's orders.
See page 725

¶Frozen citrus fruit juices are now delivered with the milk each morning by some dairies.
See page 728

¶"Invest all of your legacy in Peruvian oil wells, if you like. Select your mate by means of matrimonial agencies. Consult an astrologer about your business deals. Trust your soul's salvation to yogis or swamis or what-not. But go to a doctor for your body's sake!"
See page 700

¶Lincoln spent many hours of thought and work in the preparation of the brief Gettysburg address. Lincoln returned home sick from the trip, and his disappointment in lack of appreciation by the audience and the press lingered for many days.
See page 712

¶The founder of Wills Eye Hospital, an institution which has devoted a century of service to ophthalmology, was a "humble, lonesome grocer."
See page 731

¶A simple and fairly accurate method of determining the normal systolic blood pressure is by the following rule: Consider the normal systolic pressure in a man aged 20 to be 120 mm. of mercury and for every 2 years add 1 mm. To determine the normal systolic pressure for women of various ages, subtract 10 mm. as determined from this formula.
See page 736

¶In Olympic Village each of the 600 "homes" for the athletes occupies a space 10 by 24 feet and contains a reception room, two sleeping rooms, a baggage compartment, shower bath, running water, electric lights, four single beds, two wash basins, drinking water, bedding, chairs, tables and draperies; each delegate will have his bed in a light airy room.
See page 722

¶Commonly known as the "lie detector," the polygraph records the changes in blood pressure of a suspect as he is being questioned. It is expected that at some future time the polygraph will be used as an authentic technic in the detection of crime by law-enforcing agencies in a manner similar to the use of fingerprints and radio systems.
See page 740

¶At 40 miles an hour a car is traveling at a rate of 58½ feet a second and has the same destructive force as it would have if it were to fall from the top of a building 54 feet high.
See page 689

¶Interviewed by a reporter after his announcement of his discovery of the x-rays, Roentgen replied to the pertinent question: "Is it light?" with "No, for it can neither be reflected nor broken." "Is it electricity?" "Not in any known form." "What is it then?" "I know not." By the observations of Roentgen and those of his successors, it is now known that x-rays are electromagnetic radiations akin to light.
See page 707

Spectacles Win

Golf Through Tinted Glasses

A Story by HENRY G. LANGWORTHY

"SINK THAT PUTT!" "He can't do it. Markam never was much good on lining up a ball!" These and other rather jocular remarks greeted the final two contestants in the Junior Handicap Tournament of the Dubuque Country Club as they came up to the flag on the last hole. The balls were about equally distant, approximately 8 feet from the pin. A number of the boys gathered to watch the finish between Syd Markam and Judd Cross. A few small wagers had been placed on the result, mostly on Cross, who was familiarly called Big Brute because of his rapidly increasing size. From the standpoint of size and strength, certainly, he ought to be able to beat almost any opponent. "Doc" Fowler stood near by with Coach Peyton, the club professional, watching the play with some amusement. Cross finally did win his game by sinking a fairly long putt.

"I'm a little disappointed over Markam's showing," said Coach Peyton. "He appeared at one time to have the making of a good golfer. In fact I was convinced of it until he began to fall down persistently in his putting. It's a frequent occurrence for him to lose out on the green as you saw him do just now. I confess I can't quite understand it. What do you think of the lad?"

Dr. Fowler, to whom Peyton was speaking, was one of the most popular men of the club and an authority on physical condition and amateur sports in general. He had an uncanny knack of sizing up a player and his playing ability.

"I never observed the boy much, but what you say interests me exceedingly," replied the physician. "I believe that it warrants some investigation." After a moment he added, "I have an idea in his case that may be worth following up."

"What is it?"

"I don't want to express an opinion prematurely, Coach," responded the doctor cautiously, "but if you'll arrange a foursome with these two boys and include ourselves, I may be able to tell you something after the game is finished."

"Sort of psychoanalysis of Markam?" queried the coach.

"Something of that kind, no doubt," smiled the physician. "Anything will do that will help me get a line on his actions and play."

In a day or two the foursome was arranged without a hint to any one that the doctor intended to study Markam to discover, if possible, some reason for his repeated failure on the greens. As putting is half the game of golf, normally allowing two strokes on every green, it is easily seen that poor results in this one department would nullify and render almost hopeless fine driving and approaching. Markam seemed physically a good specimen of humanity and from that point of view ought to have been able to make the grade. By judicious inquiry and a running conversation, in the course of the foursome play the physician brought out many facts. For one thing, he observed that whenever Markam faced the sun he scowled frightfully as though in some distress.

"Light bothersome?" asked the physician.

"Terrible at times. It's nothing, however, to the splitting headaches I often get after playing a hard game. I guess it's from tension or nervousness."

The doctor said nothing but continued his quiet observations. On another hole he noted that Markam, both on making a short approach and on putting, squinted his eyes and wrinkled up his forehead. His putts on the whole had a curious knack of always running off line and missing the cup, usually just a little to the right. Often the boy rubbed his eyes before putting, as if to clear them. At the end of the game, Syd confessed to the usual headache as they went into the club house. The foursome had been a close one, with Cross and the professional beating the doctor and Markam by a couple of holes.

"What do you make of the lad?" asked Coach after they had taken their showers and were alone. "Did you discover anything worth while?"

"I believe I did," responded the physician. "Markam's driving and long fairway shots are excellent. He sees well enough at a distance. No trouble there. I observed, however, that whenever he lines up a putt he starts to scowl and blink. He is really beginning to get a permanent wrinkling of the skin of the forehead and about the corners of his eyes from squinting. I am positive it means that he is suffering from eyestrain and light glare and should have an eye examination. It might solve most of his trouble."

"I never thought of the eyes in his case," responded the coach. "I have seen him follow and locate many a long drive. If it had been some of the others, I might have come to such a conclusion myself. I am glad, however, that we have something to work on. He does drive a long ball and is faithful in practice."

A few days later, acting on the suggestion of the physician, Syd had his eyes examined. The eye specialist was not long in discovering that he was suffering from astigmatism and light glare. Astigmatism occurs when one part of the front portion of the eyeball, the cornea, is curved more in one direction than it is in another. The result is that rays of light are not focused equally on the retina, and a straight line or a close object often appears blurred or distorted altogether. In such a case the line of the putt or cup itself may momentarily become wavy or perhaps fade out altogether. The astigmatism in Syd's case was not sufficient to interfere with his seeing objects at great distances because that required almost no focusing power. It was only during the strain and focusing of close putting that watering of the eyes and the effects of astigmatism were noticed.

"I'm prescribing glasses for you at once," said the specialist, "and also adding an almost invisible absorption tint in the glass to filter out excessive glare. Your eyes are extremely sensitive to light."

Markam looked disgusted and walked out of the office not in the best frame of mind over the idea of having to wear glasses.

The match depended on a single putt.

"What a nuisance!" he ejaculated.

Meeting Doc Fowler that afternoon on the first tee, he said, rather lamely, "The eye specialist tells me I'm to use spectacles. I hate to wear them. Always thought glasses would be in the way and weaken my game."

"Not at all, Markam, if you really need them. Don't worry about that fact. Indeed, I am sure glasses in your case will improve your putting considerably and stop your headaches. I thought as much after we played our foursome the other day so I mentioned it to Coach."

"So that's where the suggestion came from," said Markam smiling a little ruefully. "I might have known it, but I appreciate your interest just the same, Dr. Fowler. It was certainly nice of you to take the trouble."

"Don't mention it," laughed the physician. "I know you are not crazy about the idea. I am sure, however, that if you wear a hat and your

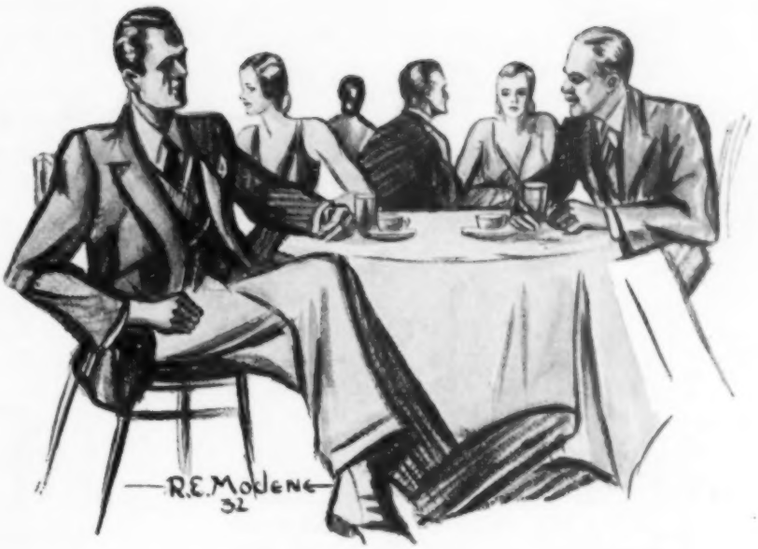
new tinted sun glasses you will give some of the boys around here a big surprise. I expect it at any rate."

"They will be surprised if wearing the glasses and practice mean anything," said Syd earnestly. "I am anxious to do everything I can to play a better game and improve my rotten putting."

"I am sure that my predictions will be fulfilled," the physician confidently asserted.

That night, Coach and Doc Fowler had dinner together as they usually did every Tuesday evening.

"You know, Coach," said the physician when the subject of Markam's eyes came up for discussion, "so many persons through carelessness or ignorance fail to have a yearly physical examination and therefore do not receive the benefits of existing scientific knowledge. Eyestrain and light glare, for instance, are easily overlooked in a lot of golfers. The craze for getting back to nature and going bareheaded in the hot sun has little justification when sensitive eyes are involved. As a matter of fact, I am constantly playing with a lot of golfers who would improve their game and lessen fatigue and nervous irritability if they would pay a little more attention to their eyes."



That night, Coach and Doc Fowler had dinner together.

The professional nodded agreement and added: "It will be interesting to see what it does for Markam. I'll watch him closely."

Three weeks passed. Syd wore his new glasses faithfully. Indeed, he found it a good thing in his case to carry two pairs, one tinted a trifle more than the other, his selection depending on whether the day was cloudy or whether it was bright. He was gradually getting to take considerable pride in his glasses, and they did not bother him in the least. Was his putting improving? He wondered. After a time he believed that it was, but the cause was hard to explain. He certainly was no longer squinting badly in the sun or wrinkling up his forehead. The watering of his eyes had also entirely ceased. Almost every day saw him with a putter in his hands practicing on the large eighteenth green near the club house.

About a month later, Coach Peyton stopped Dr. Fowler on the porch and said to him: "Doc, I'd like to have you play in a foursome Saturday afternoon. It's time I checked up on Markam. I want you and the boy to play Judd Cross and me again. We'll see whether he has really improved. You know we beat you last time, and I am willing to give you a chance at revenge."

"Sort of a challenge, eh? It's all right with me. I'll accept," readily agreed the physician. "It will be in particular my man against yours."

"Agreed," said the professional, laughing. "I'll bet the sodas on my man."

"Taken," was the instant comeback.

The foursome teed off at 3 o'clock. It was a wonderful summer afternoon on the links, with conditions perfect for golf. They were playing what is called a "Scotch foursome," the side winning low ball and low total on a hole taking two points, or a point for each. Cross and the professional started out in whirlwind fashion so that the other pair were several points down in short order. Nothing daunted, however, Markam and the physician made some good shots to pick up gradually. On the turn they found themselves but two points down, indicating after all a close game. Cross was the one perhaps a little off his game, or at least so it seemed. On the sixteenth they were finally all even and the match was tied.

"You have been doing some excellent work on the greens," observed the physician to Markam. "Your putting on those last two holes beat Cross and gave us the needed wins."

Markam looked his pleasure.

"I say, Syd," remarked Cross, "You seem to have it on me today somehow, but we still have two holes to go. I'll have to tighten up to win."

"O.K. with me," laughed Syd.

On the seventeenth green the four were on in two, lying varying distances from the pin.

"It looks like our hole," suggested Cross to Markam, to see whether he could get his opponent rattled. "You know, Syd, you never could sink a putt."

To Cross' surprise, however, Markam sank his putt while he himself actually missed. The shoe was on the other foot now. The physician unfortunately missed his putt so that the score was still even. They were now on the last hole, and the score was tied. Coming up to the long

(Continued on page 734)

Are You Afraid, Too?

By

Marian Castle

"IF YOU are over 40, you think about it. You worry about it at times. Now and then, in the middle of the night, you wake up and wonder—and a cold panic seizes you. You are in the grip of a secret, primitive, unreasoning terror.

"And what do you do about it? Absolutely nothing. In the morning you pooh-pooh the whole idea and walk a block out of your way to avoid passing the doctor's office. 'Never trouble trouble till trouble troubles you!' you say to yourself with forced cheerfulness, and all the while you go on secretly worrying—and doing nothing.

"Specialists agree that no disease of civilized existence is approached by intelligent men and women with such lamentable stupidity as cancer. You take out life insurance while you are in good health; you buy umbrellas when the sun shines; you go to the dentist twice a year—ache or no ache. But when it comes to cancer, you adopt the tactics of a voodoo-worshiper."

The cancer specialist resumed his talk, while he shuffled through the cards in his file of case records: "This woman of whom I was speaking," he said, pulling out a card and eyeing it enigmatically, "is the wife of a prominent broker in this city. They are traveled, well read, play a shrewd game of contract, and she's a regular fan for talks on modern art and relativity. Well, one day she discovered a lump in her breast."

"So she came right down to you!" I suggested promptly.

"She did not! She was so paralyzed with fear that she didn't even tell her husband at first. Queer how you women can be so brave in some crises and so cowardly in others. She waited several months. The lump didn't go away. Finally she came to see me."

"And it was too late!" I interjected sadly.

"Certainly not! She still had a fine chance for a permanent recovery, even assuming the worst—that the growth was malignant. But what did the fool woman do when I told her she ought to be operated on at once?"

I shook my head. I had been wrong too often.

"She said she thought she'd go home and think it over!" He paused here and mopped his forehead with an immaculate handkerchief. "Think over whether she'd like to be operated on for a breast cancer! . . . Like to be!" His emphasis was grim.

"Then what?" I prompted.

"I didn't see her for more than a year and a half. One day she dragged sheepishly into my office. She confessed that right after I had diagnosed her case, she had gone home and told a neighbor about it. The neighbor said: 'Why, don't be absurd! You won't need to have an operation. Dr. So-and-so cured me of a breast cancer just with simple treatments!' So the woman went to Dr. So-and-so and took the 'simple treatments' for eighteen months. They aggravated the growing cancer. And here she was back, with a malignant growth that had a known history of two years, and wanted me to operate!"

"Did you?" I asked dully.

"Oh, yes. Relieves the pain, you know. I explained to her husband how useless it was. She has only a month or so left." He looked out the window, and the lines about his mouth grew taut. "Every one will whisper: 'Oh, yes, the poor thing had an operation, but there's simply no cure for cancer!' "

"But is there a cure, Doctor?"

"Cure? Cure? What do you mean—cure? When you use the knife to remove a ruptured appendix, a diseased gallbladder or septic tonsils, is that a cure? If you get out all the poison, and the patient lives, it's a cure. If you fail to get out all the poison, and the patient dies sooner or later because of that poison, then it is not a cure. It's the same with cancer. If you get rid of it in time, it's cured. Of course, if you mean, is there any paste or salve or pill that will cure a cancer—there is no cure!"

"But certain doctors do advertise painless cancer cures!"

"Quacks! Every one of them quacks! They build up their reputations by treating benign tumors, labeled cancers, which would probably never have caused any trouble anyhow! When they come across a real cancer, they're helpless. On the other hand, I could give you records of thousands and thousands of men and women who, years ago, had cancers, but who today, because of prompt and skilled treatment, carry about with them all-but-forgotten scars as their only reminders of those cancers. But these folks are all too few!

"As long as people regard cancer as worse than leprosy, as a stigma the symptoms of which are to be ignored, then mentioned only in whispers and at last diagnosed when they can no longer be ignored, just so long will cancer be the specter of middle-aged America!"

He cleared his throat. "Remember how we used to act about tuberculosis?" he asked abruptly.

"Why—er—" I temporized.

"Your grandmother died of it, maybe, though it was never mentioned aloud. And when your Uncle John or your Aunt Mary came down with it, every one shook his head and said it was 'in the family.' Pretty soon Uncle John or Aunt Mary died too. 'Galloping consumption,' said the whisperers. But when your generation got it, well—you were put to bed and rested and dieted back to health. You were nicely casual about it all. What happened when the papers gave out the news that the son of the President had tuberculosis? There was a kindly but cheerful murmur of sympathy throughout the nation. That was all. The fear of tuberculosis was gone. Plenty of people still die of it. But people aren't afraid to mention it, to admit having it, to try to cure it. Tuberculosis has stopped being a 'fear word.' That's what we've got to do for cancer—stop its being a 'fear word!' "

"But how?"

"Education. Prevention. Treatment."

"Education—prevention? But I thought—it's so mysterious. Is there anything the individual can do?"

"Plenty. First he can have an examination every year by a cancer-trained doctor—there are still too few of them! Then he can know what cancer is not!"

"Is not?"

"Certainly. He can know that, according to our best opinion, cancer is not infectious; nor is it a germ disease. It is not affected by climate, locality, houses, social conditions, or directly by food and diet. It does not spring up spontaneously in normal tissue; there is always a precancerous stage of irritation. Heredity has little to do with it.

"Cancer is, on the other hand, a running amuck of cells—cells 'gone loco,' as they'd say in the West. Cancer, as a disease, is as old as man. It occurs in plants and animals. Primitive peoples know it. But it is more common in civilized races where life is longer and is lived under a greater tension."

"But, Doctor, I know this is important, but it doesn't tell the average middle-aged American what to look out for."

"There are about four things to watch for, and those are easy to remember: any lump anywhere in the body; any sore that does not heal quickly; any discharge or bleeding from any orifice of the body, and any change in warts, moles or those darkened patches of skin that sometimes appear on elderly people. There! On the appearance of any of these signs, he should have an examination at once. Why, do you know that the average case under my experience runs from fifteen months to two years before an operation is finally performed? When any cancer should be considered as an emergency!"

"But I've always heard that too much thinking about it makes cancerphobia or cancer-fear?" I suggested timidly.

"Cancer-fear nothing! It's the old wives' tales that make cancerphobias, not intelligent information. Who are the most harrowed by terror of all the persons you know? Why, those who carry around unvoiced surmises and fears with them. Nine times out of ten the symptoms that worry them don't mean a thing; they may indicate only nervous indigestion or a harmless cyst. A good doctor could soon dispel these fears and send the worriers home rejoicing. But in those infrequent cases which are malignant, he could see that the patients received prompt and hope-inspiring treatment."

"You mean—operate?"

"Not always, but usually. It's true the whole civilized world is simply praying for a magic cancer cure. But in the meantime there are just three tested cancer remedies—surgery,

radium and the x-rays, and often surgery followed by either radium or x-ray treatments. Don't let yourself be experimented on. Accept, instead, the methods that have permitted thousands of excancer patients to resume life again, well, strong and happy. I never shall forget the case of a couple of sisters. You might call them the wise and foolish virgins."

"What happened to them?" I asked.

"Well, they were both college professors, along toward 50, book-learned until you were scared to open your mouth for fear of cleaving an infinitive or dangling a participle or something! About a year apart, they both had cancers of the breast. The first one thought it would be so much pleasanter to go to a pretty scenic 'sanatorium' and have hers removed without using the cruel knife. She went. She stayed three months. The cancer was 'cured.' The second sister had hers diagnosed a year later. Even she—smart as she was—came within an ace of going to the same place as her sister. Then some one with some gumption talked a little plain talk to her. She went to a reputable surgeon." Here he grinned. "No, not to me—there are other good men in the profession. She was operated on. I saw her the following day, and she was writing post-cards to her friends. She had the usual x-ray treatments, went back to her teaching and has been well and happy ever since. That's been eight years now."

"But the first sister?" I asked reluctantly.

"Oh, you know—recurrence. She's been dead about five years, I guess. Too bad."

I shivered. "Too bad" seemed to sum it up with grisly aptness.

"Fortunately, most of the commoner forms of cancer are fairly easily diagnosed," said the doctor cheerfully.

"What are some of the commoner forms?"

"In men, cancer of the mouth and lips. It is usually found among pipe smokers, or in those who have jagged teeth and dirty mouths. It is successfully taken care of, if attended to early enough."

"And in women?"

"Cancer of the breast. It yields to treatment easily, too. It often follows interrupted lactation in nursing mothers. Cancer of the uterus is another rather frequent form and often follows lacerations caused by improperly attended childbirth. It is likewise 'treatable' by one of the three methods I mentioned before."

"Tell me the other common kinds."

"Stomach cancers occur in both sexes. Contrary to general opinion, stomach cancers are seldom the result of old ulcers. More moderation in food would be sensible—not too much, not too hot and not too cold. If discovered soon enough, stomach cancers can be relieved. The thing to remember is that continued digestive distress in adults should be carefully diagnosed, and constipation should most certainly be avoided."

He took off his glasses and polished them meticulously.

"Did you ever stop to think," he inquired dryly, "that man, of all the animals, has the most frequent chances for overloading the digestive tract and the fewest chances for emptying it?

"Well," he resumed briskly, "to come back to the commoner forms. Skin cancers occur in both sexes. They are easily discovered and easily removed, if properly and promptly attended to. Luckily for mankind, the most obscure cancers are the most infrequent. Now I guess that's enough for any one mind to digest at a sitting," he finished.

"Yes, but how would you sum it all up, if you were speaking to Mr. and Mrs. Prime-of-life in person?"

"Stop whispering! Talk casually and sanely about cancer. Find out about the folks around you who have been successfully treated. You'll be surprised! Stop regarding only the fatalities. Remember that even now, while we doctors are combating this medieval secrecy on the part of you human ostriches who are our potential patients, cancer doesn't begin to take the toll of middle-aged life that heart disease does!"

"Yes?"

"And come to see us once a year. No decent doctor is a salesman for operations! He'll do anything in his power to avoid an unnecessary one. But if you have to be operated on, you want a good man to do it. If an operation isn't necessary—well, it won't break the old budget to pay out a few dollars for an examination and receive, in return, peace of mind!"

"And?"

"Last, avoid any miraculous and easy 'cures.' Invest all of your legacy in Peruvian oil wells, if you like. Select your mate by means of matrimonial agencies. Consult an astrologer about your business deals. Trust your soul's salvation to yogis or swamis or what-not. But go to a good doctor for your body's sake!"

He smiled benignly. My time was up.

"Thank you so much, Doctor. But before I go, I've a little—that is, I've been worrying about this spot on my chin!"

"How long have you had it?"

"Well—er—quite a while!"

"There! So you're no better than the rest of them. I'll bet you've even been losing sleep over it!" he snorted indignantly. "I suppose you'd have waited a couple of years before you'd ever have mentioned it, if we hadn't already been right on the subject. Well, as a matter of fact, the thing is only a sebaceous cyst. But next time, I hope you'll have a little more sense. Now, nothing to worry about. Good afternoon!"

"Good afternoon," said I, meekly, "until this time next year, Doctor!"

FOODS--

Their Selection and Preparation

By E. M. Geraghty

Lowrey-Sill

FRUITS: I

RARELY does one hear objections to the fruit part of one's menus, unless there is a personal objection to some specific fruit or to the too oft repeated appearance of one item. I shall dwell on the points of value and the characteristics of some of the many offerings for the table.

Fruits are of great value in the diet because of their agreeable flavor, variety, vitamin content, mineral contributions and bulk. In almost all instances the fresh fruits have greater color and appetite appeal than have the cooked fruits, but the latter, either canned or dried, offer variety the year round, and unless too much sugar is added, are valuable items for the menu.

In the discussion of individual fruits, later in this article, the acid present in many fruits will be noted. A recapitulation of the organic acid content of fruits would give us this concise statement: Malic acid appears in apples, berries, cherries, currants, grapes, pears and pineapples. Citric acid occurs in currants, gooseberries, grapefruit, lemons, limes and oranges. Tartaric acid and racemic acid are found in grapes. Acetic acid is not found in the fruit but is a result of fermentation of starches and sugars. It may be well to emphasize that "acid fruits" such as the orange, lemon and grapefruit do not form acid in the body.

An analysis of reasons for the inclusion of some fruits more frequently than others leads to a selection on the points of vitamin potency, mineral content and bulk. Some vitamin A may be procured from raw apples, avocados, bananas, cantaloupe, cherries, dates, grapefruit, grapes, lemons, mangoes, oranges, papayas, peaches, pineapples, plantains, prunes, sapodillas and strawberries.

Vitamin B will be furnished by raw apples, avocados, bananas, cantaloupes, cherries, dates, grapefruit, grapes, lemons, oranges, papayas, peaches, pears, pineapples, plantains, prunes, raisins and strawberries.

For vitamin C one may choose fresh raw apples, raw bananas or those baked in the skin, cantaloupes, grapefruit, fresh grapes, fresh guavas, fresh lemons, fresh limes, fresh orange juice, fresh oranges, papayas, fresh pears, pineapples, raspberries, sapodillas and strawberries.

To meet the body's mineral needs, calcium is offered in grapefruit, lemons, oranges, prunes, raisins, raspberries and strawberries; iron in prunes and raisins, and phosphorus in bananas, grapefruit, grapes, oranges, peaches, pears, pineapples, prunes, raisins, raspberries and strawberries. For bulk there are apples, blackberries, blueberries, melons, cherries, figs, grapes, grapefruit, oranges, peaches, pears, pineapples and plums.

Pectin is a substance found in varying amounts in fruits. In some cases it is found in the raw fruit and in others is not discernible until the juice is cooked. This substance is essential to jelly making. Apples, grapes, quinces, currants, blackberries, gooseberries, cranberries and guavas contain pectin.

The Apple Family

The apple belongs to the same family as the pear, quince, medlar and loquat. Crab apples are really from another family, the group of wild apples which by cultivation are developing into the type used for jelly and pickling.

The apple is one of the "standbys" in the fruit line. Today, with attention given to harvesting, packing and maintenance of temperature control during storage and subsequent transportation, good apples for table use may be secured all year round. There are, however, certain

seasons when some varieties are at their best, and these seasons are shown in the accompanying tabulation:

VARIETY	BEST USE	COLOR	SEASON
Arkansas	Cooking	Green	November to May
Baldwin	Cooking	Red	November to May
Ben Davis	Cooking	Red	December to June
Delicious	Eating	Red	October to April
Early Harvest	Eating	Yellow	July to August
Fall Pippin	Cooking	Green	September to January
Fameuse	Eating	Yellow	October to March
Gano	Cooking	Red	November to June
Gravenstein	Cooking	Green	July to September
Greening	Cooking, Eating	Green	November to March
Green Sweet	Eating	Green	November to March
Grimes Golden	Eating	Yellow	October to December
Horse	Cooking	Red	July to August
Jonathan	Eating	Red	October to February
Lady Sweet	Eating	Red	November to April
Limbertwig	Cooking	Red	November to March
Maiden Blush	Cooking	Yellow	September to December
Missouri Pippin	Cooking	Red	October to May
McIntosh	Cooking	Red	September to January
Newton Pippin	Cooking	Green	November to March
Northern Spy	Cooking, Eating	Red	September to May
Northwestern	Cooking	Red	November to March
Oldenburg	Cooking	Yellow	July to October
Red Astrachan	Cooking	Red	July and August
Red June	Eating	Red	July to October
Rome Beauty	Cooking	Red	November to May
Russet	Eating	Green	December to March
Spitzenburg	Cooking	Red	October to February
Stayman	Cooking	Red	November to April
Streaked Pippin	Cooking	Red	November to March
Swaar	Cooking	Yellow	November to March
Tolman	Cooking	Red	November to March
Tompkins King	Eating, Cooking	Red	November to February
Twenty Ounce	Cooking	Green	September to December
Wagner	Cooking	Red	October to February
Wealthy	Eating	Red	September to October
White Pearmain	Eating	Yellow	December to March
Winesap	Eating, Cooking	Red	January to June
Wolf River	Cooking	Yellow	September to October
Yellow Bellflower	Cooking	Yellow	September to April
Yellow Transparent	Cooking	Yellow	July to August
York Imperial	Cooking, Eating	Red	October to February

The loquat comes from Asia, is grown in subtropical areas and has recently been introduced into California with great success. The fruit, which is a little larger than a plum, grows in small bunches, is yellow or red, and although it is of value fresh, its best use is jelly. Japanese medlar is another name for this fruit. Medlar is a fruit not used as food until about to decay. The flavor then is bland and slightly astringent. The fruit is used both raw and cooked.

The May apple is known also as the mandrake. The fruit is egg-shaped, soft and yellow, with a seedy pulp. The flavor is flat, but if the fruit is made into marmalade a rather good product results.

The Pear Family

Pears are bland and not distinctive enough in flavor to have a strong popular appeal. This blandness lends itself to the use of the pear as a filler with more flavorsome fruits. Pears may be used fresh as dessert, in salads or fruit cocktails, and for canning and pickling. The varieties are many, but the best known are Anion, Bartlett, Bose, Clapp's Favorite, Duchess, Garber, Howell, Kieffer, Le Conte, Seckel and Winter Neles.

"Barberry fig" and "prickly pear" are terms applied to the edible fruit of cactus plant grown in subtropical countries. The flavor is much like that of a watermelon.

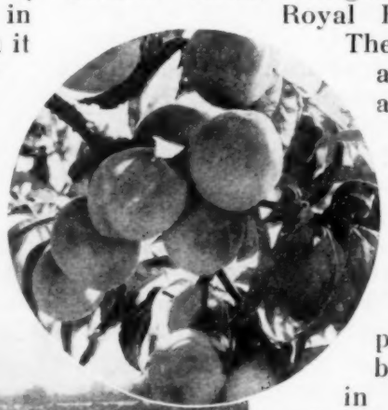
Strawberry pear is the fruit of a cactus grown in the West Indies and Mexico. It is pear shaped, red with a white pulp slightly suggestive of the strawberry in flavor, and is used fresh and as an ingredient of pepper pot.

The quince is of little value raw but makes fine jelly, jam, marmalade, honey and paste. The fruit resembles the apple or pear in shape, is yellow when ripe, and has a delightful aroma.

The Bengal quince is a citrus fruit from the East Indies. It is shaped much like a pear and is from 3 to 5 inches in diameter. The fruit is orange colored and the skin is greenish yellow.

The Peach Family

Apricots belong to the peach family but ripen earlier. They are grown most extensively in China, Japan, Africa, Syria and California. They are used and prepared the same as peaches but make a much more acceptable dried fruit. The California season begins about June 15 and continues for two months. The best known varieties are Alexander, Alexis, Early Golden, Harris, Montgamet, Moor Park, Peach, Royal Blenheim and Tilton.



Pictured below is a 3 year old peach and apple orchard.

Century Photos

The St. Domingo apricot and South American apricot are each really maumee, a fruit growing in the American tropics. They are round, measure from 3 to 6 inches across and are henna colored with a juicy pulp. They are used both in the fresh and in the preserved form.

Peaches originally came from China or Persia. They are now grown in semitropical areas of Europe, Africa and Asia, and throughout the United States. Peaches are at their best flavor only when tree ripened, but then they are not satisfactorily transportable. Therefore, many people who must depend on city markets are never able to enjoy this really luscious fruit at its best.

There are two varieties according to color, white and yellow. The white is much more delicate, but the yellow has a richer flavor. They are also classified according to tenacity of stones as freestone and clingstone. California, Georgia, Michigan, Texas, New York, Arkansas and Oklahoma are our greatest peach states. The peaches are at their finest when fresh but are excellent baked or canned, and may also be dried.

Nectarines resemble small peaches. They are grown in Oregon and California and are usually dried.

Century Photos

A tempting cluster of cherries.

The Banana Family

Bananas, once considered a rather lowly fruit, are now being accepted into much better fruit circles and are even being given on diets in instances in which they were once taboo. They grow in bunches holding from 90 to 300 bananas. Most of the bananas consumed in the United States come from Central America, Jamaica, Colombia and Cuba; the best known are those of the yellow variety, but the red ones are occasionally seen in our markets. The one liked best in the tropical countries is the "fig" or "lady-finger" banana, but owing to the thinness of its skin it does not bear transportation well. The dwarf Cavendish banana is much like the "fig-banana." Bananas are more sensitive to temperature fluctuations than are most fruits. They should never be kept in a cold room or in a refrigerator—50 F. is best for them. They are really ripe enough to eat only when brown spots show on the skin.

Papaws grow freely throughout the United States. They are about the size of a pear and resemble bananas in odor and flavor.

The plantain belongs to the banana family but is much larger. The flesh when raw is less sweet than that of the banana, but it is good when boiled, baked or roasted, and served in the same manner as are potatoes.

Berries

Barberries grow on shrubby bushes used for decorative hedge and foundation planting purposes. The long red berries are used for pickles, preserves, jams and pies.

Buffalo berries look much like barberries but have a different flavor. They are used for jelly.

Blackberries are cultivated now so that the size and appearance are much better than those of the wild species from which they come, but in some instances the flavor is not so good. Blackberries are used fresh and in jams, jellies and wines.

Dewberries are similar to blackberries but are more delicate in flavor. They grow wild in northern United States.

Blueberries grow wild throughout the north temperate area and are now being cultivated in home gardens. As yet the cultivated variety has a less desirable flavor than the wild berry. Both malic and citric acids are found in blueberries. They are delicious when fresh and are very acceptable for pies when canned. The various names (bilberry, blueberry, huckleberry and whortleberry) usually applied to these berries are loosely used and generally indicate the same product. However, there may be this distinction: In New England the bluish colored berries are called blueberries, and the dark or almost black ones are called huckleberries. West and south of New England the term used most generally is huckleberry. From a botanical point of view, bilberries and blueberries belong to the same family, and huckleberries belong to another group. Bilberries are larger and sweeter than huckleberries, and the seeds are small.

The cloudberry is a red or yellow acid fruit suggesting the tamarind in flavor and the raspberry in shape. It grows wild in Scotland, Norway and Lapland, and is used fresh and canned.

Cranberries connote turkey and Thanksgiving to most of us. The berry grows on low bushes in temperate areas in Europe and America. There is a great deal of pectin present, so the berries are excellent for jelly making. They are used mostly for jelly, sauce and pie. The acids present are malic and benzoic. Recently, dried cranberries have appeared on the market and are so satisfactory that this delicious sauce may now be had all year round. Massachusetts, New Jersey and Wisconsin are the states giving us the greatest crops.

Currants are red, black or white when ripe. The black currants are favored by some English people for jelly and sauce with meat, but unless one has cultivated a taste for these, one is apt to consider the flavor a bit strong. The red currants are rather tart to use fresh, but they make delicious sauce, jelly, jam and pie. The white currants are quite acceptable fresh but are rather insipid. The acid is malic. Zante currants are really dried, seedless grapes or small raisins.

Elderberries grow on a decorative, flowered, high shrub. The fruit grows in large clusters of tiny bluish-black berries, and its chief use is for pie filling, jam, jelly and wine.

Gooseberries have been cultivated and improved. The flavor is so insipid that the berries do not find much favor as a fresh fruit, but they are used extensively for jams, jellies and pies. The Barbados gooseberry or blade apple grows in the West Indies. It is yellow and has an excellent flavor.

The hackberry grows on the nettle tree. It is oblong, from one-half to three-fourths inch in length, sweet and aromatic, and dark blue. Sugarberry is another name for this fruit.

The Juneberry comes from the shad bush. It looks like a miniature apple, is red, purple or almost black. It is used both fresh and dried. It is also called service berry.

Loganberry is a fruit resembling the blackberry in shape and the red raspberry in color and flavor. The color is dark red, the flavor is excellent and the fruit is acceptable fresh, canned or as juice.

Probably because of its extreme sweetness, the fresh mulberry is little used in this country. It is popular in Europe. The main varieties are black, red and white.

The raspberry grows wild in a large area of the United States. The cultivated fruit is much larger than the wild and has a finer flavor. The red and black berries resemble each other in shape but are utterly unlike in flavor. They are in season from June to August. They are both excellent when raw and make fine flavored jams, jellies, preserves and pies.

Strawberries grow wild over Europe, Asia and America. The cultivated berry is much larger than the wild berry but is not nearly so fine in flavor. The fruit is best when fully ripened on the plants and eaten as soon as possible. The best flavored varieties are not the best "packers," so many of the berries found in the markets lack the fine flavor of the product of home gardens. The berries are best served fresh, but they make fine jam, and some varieties are good canned.

The sunberry is a sweet berry from one half to three quarters of an inch in diameter, orange or blue black in color. Its uses are similar to those of the blueberry.

Cherries

The cherry probably came to us from the vicinity of the Caspian Sea and from Asia. There are two main groups of cherries, sweet and sour. These are divided into about 250 varieties. The best known sweet cherries are Black Oxhearts, White Oxhearts, Tartarian and Bigarreau. The best known sour cherries are Morello and Early Richmond. All these varieties may be canned, dried and preserved. The Maraschino cherry is really the Marasca from the province of Dalmatia in Austria. The cherry is prepared by bleaching the fruit in a solution of salt with sulphurous acid, washing thoroughly and then saturating with sugar or dextrose, dyeing red or green with coal tar dyes and preserving with alcohol. The acid in cherries is expressed as sulphuric although it is mostly malic.

The Brazilian or Surenain cherry is the fruit of a Brazilian shrub, now being grown in California and Florida. It resembles a large red currant or gooseberry. It is used raw and in preserves and jelly.

[NOTE.—Part 2 of Miss Geraghty's article on fruits will appear in the September issue.]

Truth is beautiful—like woman in our own country. She never strains to add to her inches by carrying extravagances under her feet. Happiness is not in success, not in bigness, but in truth.

—RABINDRANATH TAGORE.

Pioneers of Medicine

Wilhelm Konrad Roentgen

By

Claude Lillingston

SOME YEARS AGO a misguided philosopher assured the world with a gesture of finality that no one breaks any really new ground after 40 years of age. Those of us beyond this age saw a door slammed in our faces. Our tale was told and it was passing dull. No further chance to make a great name for ourselves. "No one over 40 need apply." But Roentgen was 50 when he discovered the x-rays, which gives us a welcome reprieve of some half score years.

Wilhelm Konrad Roentgen was born, March 27, 1845, in the small town of Lennep, Germany. He was an only child, and his father, who was engaged in commerce, could trace his pedigree back several centuries. But there was no one distinguished in his ancestry apart from a David Roentgen, born in 1743, whose skill as a cabinet maker, in inlaid work, attracted the attention of such distinguished customers as Catherine of Russia, Marie Antoinette, and Frederick William II of Prussia. It is worth noting that Wilhelm Roentgen's parents were cousins.

The boy's childhood was uneventful and his scholastic career undistinguished. Plodding and conscientious, he seemed destined to slip through school life happily unnoticed, when an incident overtook him which brought much bitterness into his life. A schoolfellow had just caricatured one of the schoolmasters on the blackboard when he entered the room. The outraged pedagogue must needs have a victim, preferably the culprit himself. Wilhelm Konrad, commanded to betray the peccant artist, remained silent. Obviously for such a sin there must be a sacrifice. And Wilhelm Konrad had to assuage the wounded susceptibilities of his master and leave the school forever. The record of his expulsion from school dogged the boy in later years and contributed not a little to the wrecking of his academic career. His mother's sympathy and understanding did much to prevent his being overwhelmed by this happening, which was doubtless merely an incident in the life of the schoolmaster, whereas it threatened to be a disaster in the boy's life.

The Roentgen family having settled in Holland, the boy had the good fortune to attract the attention of a kindly native of Switzerland, who used his influence to secure the admission of Wilhelm into the Polytechnic School of Zurich. Here he met August Kundt, teacher in experimental physics, and spent several happy years. The two were inseparable for many years, the younger following the older man whenever promotion took him to a new center of learning. Roentgen's tendency to attach himself firmly only to a few friends had probably something to do with his love of Nature, flowers in particular, and of quiet companion-

ship over cards and chess. Such comparatively exuberant entertainments as dancing did not attract him.

In 1868, Roentgen received an engineering diploma, and in the following year he took his degree of Doctor of Philosophy. Barely two years later he followed Kundt to Wurzburg. He was not quite happy in the conventional, academic atmosphere of this old university town, which doubtless frigidly ignored the young obscure polytechnician who did not have degrees in Latin or Greek—languages with which Roentgen had, however, a more than nodding acquaintance. So when Kundt was promoted to Strassburg in 1872, Roentgen was glad to go with him, and in the new university of this town he found a much more congenial atmosphere in which to work. In the same year he married Bertha Ludwig, a Swiss, with whom he lived happily for fifty years, though the marriage was childless.

In 1875, at the early age of 30, Roentgen was appointed professor of mathematics and physics in Wurttemberg. His stay here did not prove happy, and in the following year he returned to Kundt and Strassburg. In 1879, he was promoted to the University of Giessen, where he spent many happy and busy years. In 1888, he was appointed professor of physics at the University of Wurzburg. Here it was that, in 1895, he was to set the world ringing with his epoch-making discovery. It must not be assumed that his work up to this date had been negligible. It had, on the contrary, been prodigious. Between the ages of 25 and 34, he published fifteen technical studies, and eighteen more between the ages of 34 and 43. Seventeen additional studies were published between the ages of 43 and 50. It was no meager output, though few are able to judge the quality of all this work.

The fateful day on which Roentgen stumbled on his discovery was Nov. 8, 1895. Certain picturesque myths have since been wrapped round it, but it seems that Roentgen never confirmed a popular yarn, according to which an old key, which had been left as a book-mark, was photographically reproduced by accident, and thus gave him the clue to this new and wonderful phenomenon. The world's imagination was fired by this discovery, and it is little wonder that it generated the most fantastic flights of thought. Some believed that the philosophers' stone, capable of turning base metals into gold, had at last been found. The antivivisectionists hailed the discovery as one which would render vivisection superfluous, for would not these new rays reveal what had hitherto been demonstrable only with the help of the vivisector's knife? Teetotalers discovered in these waves a new ray of hope, for would not they reveal the ravages of alcohol on the inner defenses of the human body and throw such a lurid light on them that even the most inveterate toper would recoil in horror and retrace his steps up the steep and narrow path of sobriety? The spiritualists in their turn did their best to link up Roentgen's discovery with all the nebulous manifestations and theories at which an unkindly and materialistic world had hitherto pointed the finger of derision.

Roentgen went on his way undisturbed, quietly submitting his discovery to one test after another. On Dec. 28, 1895, after seven weeks of the most intense toil, he communicated his first classic, "Vorläufige Mitteilung," to the Physical-Medical Society of Wurzburg. On account of the Christmas holidays there was no full dress meeting of the society on this date, and it was not till Jan. 3, 1896, that his discovery was formally presented to this society. The discovery was no longer a secret, and the room in which Roentgen was to address the members of the society was packed. His entry was the signal for enthusiastic cheers which broke out again and again with ever growing vehemence. The aged anatomist, von Koelliker, the Nestor of the society, whose hand was photographed on this occasion, declared that, never in the forty-eight years he had been a member of this society, had he witnessed such an event. When he suggested that the new rays should henceforth be known as roentgen rays, he had the wholehearted support of the entire audience. In this atmosphere of jubilant excitement there was but one critical and hesitant voice, that of Roentgen himself who, with characteristic modesty, intimated that he had stumbled on his discovery more or less by accident.

It is doubtful whether any great discoverer has been as silent and reticent as Roentgen was at this eventful period. Even his two assistants in the laboratory knew nothing about his "Vorläufige Mitteilung" before it was made. To his old friend T. Boveri, the zoologist, he remarked briefly at this time: "I have discovered something interesting, but I do not know if my observations are correct." That was all. To the rest of the world he was at first silent, and during the feverish days which followed his discovery, he not only took all his meals in his laboratory but even slept there in order to be able to concentrate on his work and escape from the distractions of the outside world.

Interviewed later on by a reporter, Roentgen replied to the pertinent question: "Is it light?" with "No, for it can neither be reflected nor broken." "Is it electricity?" "Not in any known form." "What is it then?" "I know not."

Roentgen was described at this period as a thin, tall man whose active movements betrayed energy and enthusiasm. His hair, standing up from his forehead, seemed to have acquired some of that electrical energy its owner radiated. He spoke quickly, in a deep voice, and he had piercing eyes.

Early in January, 1896, Roentgen was summoned to Berlin to demonstrate his discovery to the kaiser, whose interest in it was so great that he remained discussing it with Roentgen till midnight. The months which followed were largely devoted to verifying and amplifying his discovery. It is now known from the observations of Roentgen and of the many scientists who have followed in his steps that the x-rays are electromagnetic radiations akin to light. They differ only therefrom in having a much smaller wavelength and a correspondingly greater frequency. The wavelengths in question are of the order of a ten-millionth part of a millimeter, and they follow one another with a frequency of about a million billion per second. Roentgen was at first inclined to believe that the x-rays are longitudinal vibrations of the ether, but this conception of their nature is not current at the present day.

In 1900, Roentgen moved to Munich to take charge of the Institute of Physics. This appointment entailed much administrative work, with a corresponding reduction of his output of scientific work. His case illustrates a perennial problem to which there will probably never be any really satisfactory solution. If a discoverer is put in charge of an institution devoted to the exploitation of his discoveries, he becomes overwhelmed by administrative duties, and that spark of originality so essential to illuminating new paths runs a serious risk of being extinguished. On the other hand, there are many tragic records of genius thwarted and stunted because it was not given scope and opportunity, some administrative head, jealous and narrow minded, having been in a position to paralyze all initiative.

In 1901, the Nobel Prize in physics was awarded to Roentgen who, in a spirit of liberal foresight, made testamentary arrangements for the revenue from this money prize to be spent by the University of Wurzburg on scientific research. It was one of Fate's picturesque little ironies that this small fortune, derived from the manufacture of explosives, should vanish into thin air with the postwar inflation in Germany. More tragic still was Roentgen's personal impoverishment from the same sweeping catastrophe.

With his international perspective, Roentgen did not blind himself during the Great War to its possible consequences, and he grieved deeply over the distress which had overtaken his country. He continued to work as before, and he cut his requirements down to the most primitive, his beloved Dutch tobacco always excepted; his friends in Holland used to provide him with this one consolatory luxury during the war. A letter of congratulation from Hindenburg himself on Roentgen's seventieth birthday was another little ray of light in those dark days.

In 1919, Roentgen's wife, who had been ill for about a year, and whom he had nursed devotedly, passed away. His circle of intimate friends had never been wide, and as one after another died, Roentgen felt a growing sense of great loneliness. The cause of his death, Feb. 10, 1923, was cancer—a disease from whose ravages many a patient has been saved by treatment with roentgen rays. His ashes were laid to rest with those of his wife and parents in Giessen.

Roentgen's death was the occasion for a general stock-taking of the value of his discovery by the world of science whose verdict was not the less appreciatory for being critical. The opinion was expressed that much remains to be learned as to the exploitation of the x-rays in treatment. The list of ailments amenable, wholly or in some degree, to x-ray treatment is already imposing. But it is in the realm of diagnosis that the x-rays have achieved the most unquestioned and decisive results.

The x-rays have facilitated the diagnosis of ailments of the heart and lungs to such a degree that they have tended to overshadow the simpler and more primitive methods of examination, such as auscultation and percussion. This is a great pity, by the way, as the medical student who neglects to familiarize himself with these primitive methods because the x-rays in his hospital give him all the information he needs may find himself a bungling novice when thrown on his own resources, far from an x-ray installation.

One of the latest, but most important, uses of the x-rays that Roentgen lived to see was in the treatment of pulmonary tuberculosis by an artificial pneumothorax. Every one has by now heard of this treatment which, with its many modifications, including the severance of pleural adhesions with an electric cautery introduced into the chest under x-ray control, has revolutionized the treatment of this disease during the last two decades. In this sphere, in which such delicate manipulative accuracy has been achieved, science would still be fumbling, were it not for the pioneer work of Wilhelm Konrad Roentgen.

The Summer Round-Up

The Annual Medical Examination Which Proves That Ignorance Is Not Always Bliss

By
RACHEL
ASH

"WELL," said Mrs. Smith, as she and her 5 year old daughter entered the doctor's office, "I don't see much sense in this visit. Betty is not sick. She sleeps well, eats well and has never had a day's illness in her life. But everywhere I go I hear about the preschool round-up. Just yesterday I read an article urging every child to be examined by a physician before he or she enters school. So here I am, and it is up to you to show me that this visit is worth while."

The doctor looked at Betty. There was no doubt that her health had not been neglected. Taller and heavier than the average child of her age, firm of musculature, rosy cheeked, she watched the doctor's procedures with much interest and obeyed his commands readily. Heart, lungs, abdomen—all were in excellent condition.

"Does Betty always hold her head to one side?" questioned the doctor.

"Why, yes! That is one habit of which I cannot break her. Neither rewards nor punishments seem to do much good. When she was a baby she used to have a puppy which always held his head cocked to one side. I think she must have learned the habit from him."

The doctor gently straightened Betty's head. At once the cause of the tilt was revealed as the left eye quickly turned inward. The mother's attention was called to the squint. "Only glasses and proper exercises for the eye muscles will straighten Betty's head," explained the physician. By tilting her head, she unconsciously compensates for the muscular imbalance of the eye. In order to see a single object, corresponding or identical points in the retina of the two eyes must be stimulated. In the presence of a squint, this is impossible. Owing to the asymmetric position of one pupil, noncorresponding points in the two retinas will be stimulated and objects will be seen double or blurred. To overcome this, the cross-eyed individual either holds the head crooked to bring images on corresponding retinal areas or becomes functionally blind in one eye. This loss of vision may occur early in life, usually before the school age. It is important, therefore, that squint is recognized and treated early in life.

"Ah," said the doctor, as he inspected Betty's mouth, "I see a permanent molar has already made its appearance. Have it examined by your dentist to make certain that no small cracks require filling. And while you are about it, have him fill the small cavity in the next tooth."

"But, doctor, that is just a baby tooth. It is going to come out anyway."

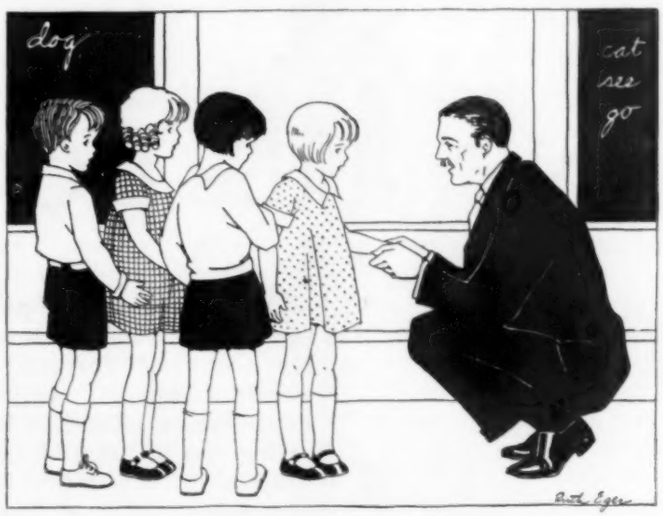
"Yes, but not until Betty is 9 or 10 years old," said the doctor. "In the meantime the cavity

will have opportunity to grow and invade the permanent teeth adjacent to it. Poisonous substances from the decayed pulp will be swallowed all day long. The discomfort of pressure on the carious tooth will prevent proper chewing of food. Finally, severe toothache and extensive decay will necessitate premature extraction of the tooth, leaving a gap into which the neighboring teeth will spread. When the permanent bicuspid is due to arrive, it will grow irregularly because of the lack of space. All these evils may be avoided by having this small cavity filled.

Before his patients were dismissed, the doctor made sure by careful questioning that no change was necessary in Betty's diet and daily regimen and that she had been protected against diphtheria and smallpox.

"Well, doctor, I do really think your explanation about Betty's teeth and squint made this visit worth while. I am wondering, however, why an annual medical examination is necessary. You tell me there is nothing wrong with her vital organs. I know how to feed her, and I see that she gets plenty of sleep, sunshine and fresh air. Surely I could tell if she was really becoming ill and needed a doctor."

"Do you remember ever looking at a picture, taken years before, of your husband or other close relative and being suddenly struck with the realization of the changes time had brought about? As you see those near to you day by day, you are unobservant of the gradual alterations wrought by age until some incident suddenly brings them to your attention. So even the most devoted mother may not notice any modification in the health of a child, whereas the trained eye of a physician may detect a pallor that should not exist, an expression of fatigue, a slight stoop of the shoulders and protrusion of the abdomen, or an early flatfoot in a stage at which correction is simple.



The doctor who sees many hundreds of children may be able to offer valuable advice to parents.

"Indeed, sometimes the physician himself is surprised to find serious disease in a child who superficially gives the appearance of good health. The other day in a group of supposedly normal school children, a child with rheumatic heart disease was found. In the examination of the preceding year she had not presented any evidence of heart trouble. Her color and general bearing were good, and there had not been any loss of weight during the year. Somewhat surprised that the doctor should have known of their existence, she admitted that for some months she had been experiencing pains down the back of her legs. So mild had they been that she had not mentioned them to her mother. Even if her parents had known of the relationship between so-called growing pains and rheumatic heart disease, her silence would have failed to rouse their suspicions.

"There was one child with a large abscess of the gum in the upper jaw from which pus could be expressed with ease, who insisted that she had never felt any pain. So unconscious had she been of the swelling above her tooth that both she and her mother were surprised when the abscess was called to their attention. It is obvious, therefore, that the child herself cannot always be counted on to volunteer information if something is amiss.

"It is surprising at times how long a condition may exist before some extraneous accident calls it to the mother's attention. I remember one mother's tale of how a lump had appeared in her daughter's neck immediately following a fall in a street-car. The lump was a tuberculous gland which had certainly taken months to form. Another mother brought her child with the story that following injections of toxin-antitoxin given three weeks previously in school as a prophylactic against diphtheria, the child had become pale, refused to eat and was losing weight. Here again a well advanced case of rheumatic heart disease was found. On second thought the mother agreed that it had been many months since the child had been really well. Neither of these mothers was of the type that neglects her children. But such subtlety marked the development of the tuberculous gland in the one child and of the rheumatic infection in the other child that the early evidence of the disease had failed to attract the mother's attention. Only the accident of the fall and the novelty of the toxin-antitoxin injection had brought to a focus the realization that something was wrong.

"Each year brings its own problems in child training. The doctor who sees many hundreds of children may offer valuable advice to the parent in the detection and handling of behavior

(Continued on page 762)

Lincoln spent many hours of thought and work in the preparation of his brief Gettysburg address.

LINCOLN and the DOCTORS

By MILTON H. SHUTES

CHAPTER XI

THERE IS much evidence to indicate that Lincoln became a changed man spiritually and was cured of his attacks of great mental depression. Even his cynical friend and biographer, Ward Lamon, attributed his "melancholy" to his lack of religious faith. Mrs. Lincoln once said that her husband thought most deeply on religion on two occasions—Willie's death and the Gettysburg Cemetery Dedication a year and a half later.

President Lincoln seemed to be impressed not only with the historical importance but also with the spiritual significance of the ceremony at Gettysburg. He spent many hours of thought and work in the preparation of his brief address, and his disappointment in the lack of appreciation by the audience and the press lingered for many days. The death of his son William was vitally personal, and the Gettysburg event was vitally patriotic in its poignancy. May we not correctly affirm now that the spiritual uplift received through these two experiences, added to the remedial submersion of his ego in his all-consuming purpose to save the Union, was more than adequate to cure—symptomatically at least—his psychoneurosis?

The immortal Dedication Address and the incidents of his trip to the historic battleground are well known, but the fact that he returned to Washington ill is little known. Gideon Wells, Secretary of the Navy, wrote in his diary at the time:

> I was invited and strongly urged by the President to attend the ceremonials at Gettysburg, but was compelled to decline, for I could not spare the time. The President returned ill and in a few days it was ascertained he had the varioloid. We were in cabinet meeting when he informed us that the physicians had the preceding evening ascertained and pronounced the nature of his complaint. It was a light form, but yet held on longer than was expected. He would have avoided an interview, but wished to submit and have our views of the message.

The *National Republican* for Nov. 28, 1863, contains the following brief editorial, entitled, "Health of the President":

> We are glad to be able to announce that the President is much better to-day. The fever from which he has suffered has left him. Thursday and Thursday night his suffering was chiefly from severe pains in the head. Yesterday, and the day before, he was not permitted by his physician to hold any interviews even with the members of his Cabinet. It is hoped that in a day or two he will gain sufficient strength to resume his official duties.

And again, in Mr. Wells' diary is this reassuring entry: "Tuesday, December 15—Seward and Chase were not present at the Cabinet meeting. The President was well and in fine spirits."

Lincoln became ill on the train leaving Gettysburg, so it is known that he was sick from the very day of the ceremony, November 19, until about the middle of December. Wayne Mac Veagh, then a young and already prominent lawyer, was a guest of Mr. Lincoln at Gettysburg and later wrote: "Others then came around him and I did not see him again until on the train on our way home. He was suffering from a severe headache and lying down in the drawing room with his head bathed in cold water."

Varioloid is a mild form of smallpox acquired by the partially immune, so the White House was not quarantined. But the newspapers made something of it, and even the London *Spectator* speculated on the effect on the war of a possible fatal termination, published a brief description of Lincoln's successor, Vice-President Hannibal Hamlin, and closed with this contribution: "Let us hope, however, that there will be no occasion for the curious medley of associations suggested by the substitution of a Hannibal in the political patriarchate, for an Abraham." Being a portion of the time in bed, attended by Dr. Stone, Lincoln had at least some surcease from the importunities of many seekers. "Now, I have something that I can give to everybody," he humorously exclaimed. And though he attended to important matters, he used the smallpox scare to advantage to rid himself of more than one undesirable visitor.

When the President went to Gettysburg, he was distressed about leaving Tad sick in bed. Returning home on the 20th, he wrote to Edward Everett, the orator of the day, that "Our sick boy, for whom you kindly inquired, we hope is past the worst." Mrs. Lincoln either was away at this time or left Washington soon after Tad was "past the worst." Her return early in December was preceded by frequent telegrams of anxiety concerning her ailing husband and son. She reached New York on the 3rd of December, "very tired" and with a "severe headache." She telegraphed for news the next morning, and in spite of a reassuring reply from Mr. Lincoln on the 5th, she sent two more telegrams on the 6th—one to Mr. Lincoln and one to Edward McManus, the doorkeeper, wanting to "know immediately exactly how Mr. Lincoln and Taddie are."

Was Tad suffering from the same light form of smallpox? The White House prescriptions and drugs were filled and purchased at Thompson's, across from the Treasury Building, a drug store that was organized in 1851 and continues to do business at 701 Fifteenth Street, N.W. Unfortunately, all its drug records prior to 1890 have been destroyed. What interesting medical deductions they would have permitted!

In September, Mrs. Lincoln was in New York with Tad, and Mr. Lincoln was trying to inveigle them home with the assurance that the Washington air was "clear and cool and apparently healthy." But later on, smallpox broke out and was a constant menace that fall and winter. Robert Lincoln wished to bring home a chum from Harvard, but on Jan. 19, 1864, his father telegraphed him as follows: "There is a good deal of smallpox here. Your friends must judge for themselves whether they ought to come or not." On March 14, he was in bed again for one day, but he met with his cabinet in his bedroom for a brief session and attended to other important matters.

CHAPTER XII

IN THE first chaotic months of the war, the inadequacy of the Medical Department to care properly for the thousands of volunteers pouring into the military camps was sensed by most people outside of the harassed department itself, which seemed completely oblivious of the situation.

An earnest impulse of benevolence swept the country and, under the guidance of the Rev. Dr. Henry W. Bellows, Dr. W. H. Van Buren and Dr. Elisha Harris of New York City, rapidly crystallized in the United States Sanitary Commission, the efficient predecessor of the American Red Cross Society. This transformation, however, was consummated only after considerable painful anxiety. Even President Lincoln feared that it might become "a fifth wheel to the coach," but finally on June 9, 1861, Simon Cameron, Secretary of War, reluctantly appointed "a Commission of Inquiry and Advice in Respect of the Sanitary Interests of the United States forces," consisting of H. W.

Bellows, D.D.; A. D. Bache, L.L.D.; Jeffries Wyman, M.D.; Samuel G. Howe, M.D., and Robert C. Wood, Surgeon, United States Army. Four days later, President Lincoln wrote on the order, "I approve of the above."

But the Surgeon-General refused to cooperate. According to L. E. Chittenden, Register of the Treasury, President Lincoln summoned the Surgeon-General to the White House and before members of the commission, he insisted that the department cooperate to the extent of its ability.

Public opinion was the lever adroitly employed by the commission to force Congress to reorganize the Medical Department, which it finally did, April 18, 1862, in a bill entitled, "An Act to reorganize and increase the efficiency of the Medical Department of the Army." One of the first steps taken toward increasing that efficiency was the appointment a week later, on April 25, of William H. Hammond, Assistant Surgeon, United States Army, as Surgeon-General. Much opposition was made to the appointment of so young a man, but President Lincoln was influenced largely by the numerous petitions signed by eminent physicians from all over the North, for he remarked that it was impossible to resist the weight of evidence in the doctor's favor which had been given by the medical profession of the whole country. The commission's choice was vindicated, for Dr. Hammond proved himself to be one of the department's greatest surgeon-generals.

During the Lincoln administration, prominent physicians were obviously the surgeon-generals of the United States Army and the presidents of the American Medical Association. The former were in more or less frequent communication with Mr. Lincoln, and the latter were known at least by reputation and possibly by contact. Dr. Thomas Lawson, Surgeon-General for twenty-five years, died May 15, 1861, soon after the inauguration, and was succeeded by Dr. Clement A. Finley, who in 1832 accompanied General Winfield Scott to the Black Hawk War and was his chief medical officer during the cholera epidemic which young Lincoln escaped. But Dr. Finley, a good army officer, met a new force in the guise of the Sanitary Commission and was compelled to give way to the young man, Dr. William H. Hammond. And Dr. Hammond, after two and a half years of notable accomplishments, succumbed to the enmity of Secretary of War Stanton and was succeeded by Dr. Joseph K. Barnes. Dr. Eli Ives of New Haven, Conn., was President of the American Medical Association for the years 1860-1862, Dr. Alden March of New York for 1863, and Dr. Nathan S. Davis of Chicago for 1864-1865. The real story of the doctors, those in sympathy with and those against the North, has not been and never will be told, for, though the true physician works with personal courage, he does it away from the blare of trumpets; and, too, the struggle of man with disease lacks the romantic zest of a fight between man and his fellow.

But the Sanitary Commission, more fittingly, could sound its battle cry. It worked on the departments at Washington, on Congress, on the President and on the sympathies of the people at large. It struck medals and held great fairs in many of the large cities. President Lincoln was invited to speak at these fairs, but he was able to appear only in Baltimore and Philadelphia and possibly in Washington. He was greatly interested in all of them and sent the original draft of the Emancipation Proclamation to be sold at auction at the fair in Chicago during August, 1863. He wrote: "I had some desire to retain the paper; but if it shall contribute to the relief and comfort of the soldiers, that will be better."

On Oct. 18, 1862, Surgeon-General Hammond received a communication from Mr. Lincoln, in which it is not difficult to detect a trace of irritation:

Sir:

A Baltimore committee called on me this morning, saying that city is full of straggling soldiers, half sick, half well, who profess to have been turned from the hospitals with no definite directions where to go. Is this true? Are men turned from the hospitals without knowing where to go?

Yours truly,
A. Lincoln.

Another committee came, this time a medical one, a group of homeopaths, to lay before Mr. Lincoln the advantages offered by homeopathy with its attenuated doses and supplies. After listening quietly, as was his wont, he dismissed the disciples of Hahnemann with a witty and effective though rather rough comparison, which expressed his idea of the futility of their system as applied to the needs of the Medical Department. He already had his ideas of that system of the art of healing, for in the great debate at Quincy on Oct. 13, 1858, where he berated Douglas for his theory of popular sovereignty, he said: "Is not that running his Popular Sovereignty down awfully? Has it not got down as thin as the homeopathic soup that was made by boiling the shadow of a pigeon that had starved to death?" And on Feb. 12, 1861, in a speech to the Indiana legislature, in referring

to the professed lovers of the Union with their affection showing thin and airy, he said: "If sick, the little pills of the homeopaths would be much too large for them to swallow." So it is safe to conclude that his physician, Dr. Stone, was not a homeopath.

But Dr. Stone was a Democrat and disagreed politically with his distinguished client. Unfortunately, he left no reminiscences of his contacts with his patient; but Frank Carpenter was one day at work in his improvised studio when Dr. Stone strolled in and, while gazing at a painting of the President, said with much feeling: "It is the province of a physician to probe deeply the interior lives of men; and I affirm that Mr. Lincoln is the purest hearted man with whom I ever came in contact."

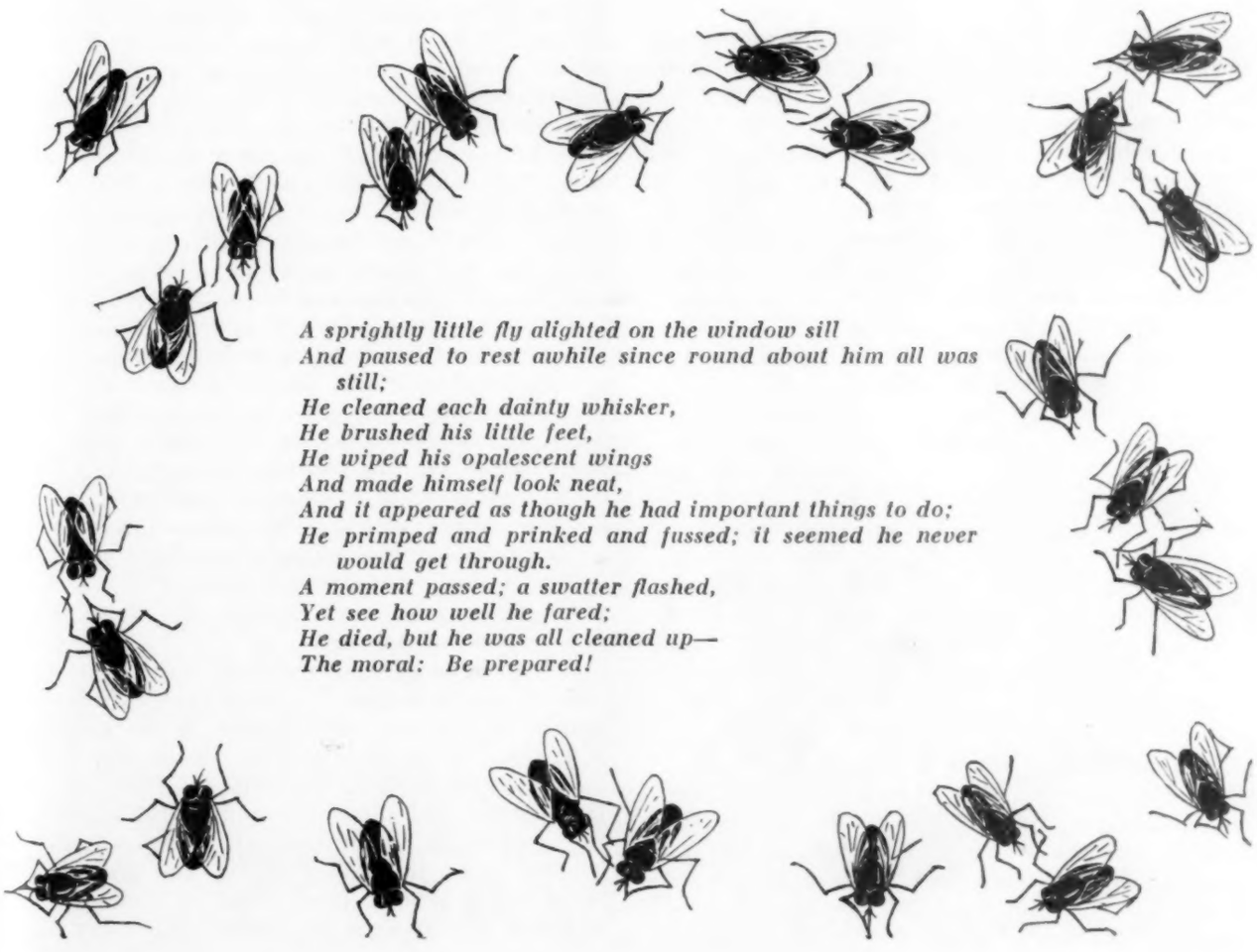
This is particularly interesting testimony when considered in relation to his alleged questionable story telling. These stories, though often undignified, were always witty, well told and expressive of a thought or an idea that he wished to convey. He was always quite solicitous about that. In his message to Congress, July 4, 1861, is this sentence: "With rebellion thus sugar-coated they have been drugging the public mind of their section for more than thirty years." When the Congressional printer criticised the word "sugar-coated" as undignified in an historical document, the President insisted that it be left alone as the American people would always know exactly what sugar-coated meant.

(To be continued)

THE LITTLE FLY

By

Henrietta McLane



A sprightly little fly alighted on the window sill
And paused to rest awhile since round about him all was still;
He cleaned each dainty whisker,
He brushed his little feet,
He wiped his opalescent wings
And made himself look neat,
And it appeared as though he had important things to do;
He primped and prinked and fussed; it seemed he never would get through.
A moment passed; a swatter flashed,
Yet see how well he fared;
He died, but he was all cleaned up—
The moral: Be prepared!

PARENTS, Cooperate with Your Child's Physician!

"But, Dr. Bowen, he won't eat cereal."

By
LOUISE PRICE BELL

"HIS BREAKFAST should consist of orange juice, a dish of nourishing cereal without sugar, a slice of whole wheat bread toasted, two pieces of broiled bacon and a glass of whole milk," the pediatrician continued.

"But, Dr. Bowen, he simply won't eat cereal, and the only way I can ever get him to drink milk is by adding chocolate to it; he'll never drink it without, I know!"

Dr. Bowen glanced at the scrawny 5 year old boy whose thin drawn face showed evidence of complete understanding of the conversation concerning him. Bobby had been brought to him as a feeding problem, but obviously the fault was not with the child.

He talked to the mothers simply and directly.

Dr. Bowen spoke to the nurse. "Miss Smith, take Bobby down to the playroom, I don't think we need him here any longer." Then he turned to the mother.

"Mrs. Reed, you brought Bobby to me for professional opinion and advice, and I have attempted to give it to you to the best of my ability; yet at every turn you meet me with negativism. When I told you that Bobby needed at least ten hours of sleep, you replied that he couldn't get to sleep until the house was quiet for the night, and when I told you he needed a midday rest, you protested that he simply would not lie down during the day. I said that you must limit the amount of candy he ate, and you assured me that he did not eat too much. Now, when I attempt to give you a proper diet list, you immediately start to tell me the food he won't eat! I wonder why some of you mothers come to me at all, Mrs. Reed, since my suggestions do not meet with your approval. I assure you that I cannot help your child unless your attitude is entirely different on the whole affair. We physicians can do nothing without the cooperation of you parents!"

Mrs. Reed looked crestfallen. "Of course, I want to do what you suggest, Dr. Bowen, but Bobby is sensitive, and . . ."

An unusual case? Decidedly not! Day after day, in every city in the country, conversations similar to this are taking place if the physician is frank. If he is not as frank as Dr. Bowen but is more tactful, the conversation may not take place, but the same conditions exist, and the physician feels equally exasperated. A mother here, a mother there, alarmed by her child's bad breath, poor color or loss of appetite, takes him to a physician, and often he is

the best pediatrician in her city. She listens to his opinion and directions and returns to her own method (or lack of method) in caring for her child. It is so much easier. After all, there was nothing really wrong with the child, so why all the fuss and unpleasantness which the physician's orders would bring about!

Being only a mother, I can speak only from a mother's point of view; but it has been my lot, because of various illnesses among our own children and those of our friends and neighbors, to be thrown with a great many physicians and parents both at home and in various hospitals. From this observation, which at best is comparatively limited, I sincerely believe not only that the average pediatrician must have the proverbial patience of Job, but that if I were forced to deal with the majority of parents, I would be continually tempted to abandon my profession and adopt one far removed from any contacts with parents. For example, a child is ordered to bed for a few days' rest, and the physician, dropping in unexpectedly, finds him playing with his train on the floor. Another child, after being put through the none too pleasant experience of a skin test to ascertain the cause of his asthmatic attacks, is restricted by his physician to certain foods after the definite causes of the attacks are found. A few weeks later the parents return to the physician with the child again suffering; when questioned closely, they will admit that they allowed him just a "little egg but not enough really to hurt him, Doctor!"

When one considers the amount of time expended and the experience gained in reaching the status of the pediatrician, and the sacrifices made for the sake of the children of the nation, it is hardly understandable why the physician's opinion is not given full sway, particularly by any one as comparatively inexperienced as a parent. Too many mothers not only lay claim to but rely on the much exploited "mother instinct," which I believe is a sentimental fallacy. Nature does endow animals with a natural instinct to care for their young, but we parents who are more fortunately endowed with reasoning capacity should certainly use some part of it in study of the proper care of our children.

Among my acquaintances is a young woman who is a college graduate, a former teacher, and a person confident of her own ability in every situation. Since there is a difference between brightness and intelligence, she may be called a bright woman. She is the mother of three children. When I was calling on her one day, our conversation drifted to reading matter of various types, and one of the callers spoke of the valuable information which she gained from one of the leading magazines for parents, a magazine which numbers among its contributors the foremost educators, pediatricians and psychologists.

"I don't believe I could raise my family without it," she remarked laughingly. "You take it, don't you, Madge?"

"No, I don't," Madge answered. "You see, I really had all that sort of thing in college, and anyway I think that a mother of three children has more practical knowledge than all those

"Going into the dahlia business, Madge?"

people put together! Don't you think that instinct tells one the right things to do for children? I do! Why, my mother never thought of reading a book or magazine on training children, and I am sure we all turned out quite satisfactorily," she added with a smug little smile.

Since the rest of us disagreed with Madge most emphatically, there followed a heated discussion which ended only when tea was served.

As we were leaving, one of the women picked up a booklet from a group which lay on the table. It bore the title, "Growing Dahlias Intelligently."

"Going into the dahlia business, Madge?" she asked.

"Well, no, not exactly, but we have a few dozen bulbs, and I have been studying the characteristics of the different kinds and the ways of caring for them. It's mighty interesting."

Needless to say, it was with difficulty that we refrained from asking why instinct would not be sufficient aid in raising dahlias as well as children. But we did refrain, realizing that our questionings would have been futile.

The fact that this mother felt competent to care for and assist in the development of three plastic pieces of humanity, unaided, and yet sought authentic and scientific knowledge before even attempting to raise dahlias is not amusing; it is pathetic—much more pathetic, indeed, than it would be if she were a so-called ignorant

mother, for after all, as the old saying goes, "we are not to blame for what we don't know!" If the ignorant mother took that attitude, it would be comprehensible; but many times it is she who, realizing her limitations, seems more eager to do the right thing by her offspring than the mother of supposedly higher mentality.

It was my privilege to work for a time in a Polish settlement of one of our larger cities, in which the children came to school after a breakfast of wieners and beer, a lunch of wieners and more beer, and a night of only a few hours' sleep following an evening spent in a poorly ventilated neighborhood motion picture theater. At first, the situation seemed hopeless and inevitable, but a mothers' club was formed, and it started in to combat the conditions, with the surprising results that after the first meeting, things began to be different. The club appealed to one of the local pediatricians, a most humane man and a real student of psychology as well as of medicine. At this meeting he talked to the mothers simply and directly about their children. He also brought diet lists for them to follow, and these were copied so that each mother could have one. These lists told the mothers just what their children should eat three times a day. The helpers assured the mothers of their willingness to aid in the preparation of any of the foods, if they did not understand.

The intent listening, the eager questions which were asked of the physician after the meeting and the enthusiasm with which those mothers left the building were most encouraging and stimulating to all of us; from that day, a steady improvement was noticed in the appearance and health of the children. Every month a meeting was held and every month either the physician already mentioned or one of equally good standing talked to the mothers, who cooperated in every way possible. In the middle of the year a clinic was held at which three physicians lent their services; it was remarkable to note the accuracy with which these mothers carried out the suggestions made for the welfare of their children. At the end of the year the parents (for the fathers often came to the meetings, too) had learned not only to care for their children properly but to look on the physician as a real friend to whom they could go for help.

In contrast to this experience is the condition that is often found in hospitals and made existent by the parents with reputedly much greater intelligence than these ignorant Polish mothers possessed! Any one who is aware of the clinics held in all the children's hospitals knows what wonderful work is done for the children at little or no expense. One of the largest of these clinics maintains a staff of physical therapists who spend hours working with the little victims of paralysis. They stand in a warmed pool all morning working the helpless arms and legs under water, exercising the parts of the body that need exercise, and all the time keeping the unfortunate little tots happy, contented and amused.

In this hospital I have overheard mothers discussing the treatments and physicians in most disparaging tones, and I have wondered how they could seem so utterly unappreciative of the men who were making it possible for this great work which benefited their children to be carried on!

"He told me to do the leg exercises morning and night, but I can't take all that time every day. How does he think I will ever get my work done, if I have to stop for that!" I once overheard one mother say to another in the elevator. And I had just come from the pool where for two hours I had seen the child worked over carefully and scientifically, and at no expense to the parents. The physician of whom the mother spoke had come in to observe the child and the progress he was making; and I knew him to be one of the most distinguished pediatricians in the country, one to whom children of the wealthy were brought, from one end of the continent to the other!

Where, oh where, is our sense of appreciation and cooperation? This mother, like hundreds of others of her kind, was well dressed and to all appearances intelligent. She drove her own car or came to the hospital each day in a cab, and she would have been incensed if accused of not doing her best for her child. Yet the one thing necessary and important to her child, her physician and herself was lacking—her cooperation with her physician.

After all, being a parent is a "big job," requiring the best efforts in every way. Parents should take inventory of themselves and aim to do the best they can with and for their children. They should read the best books, hear the best speakers, study the best educators along the line of child development and, last but not least, at all times aim to cooperate with their child's physician!

Appearances are deceiving, for this lovely pool produced malaria mosquitoes.

Does Your Water Garden Grow Mosquitoes?

By ERNEST W. STEEL

AN ORNAMENTAL pool of water adds much to the beauty and attractiveness of a garden. Unless it receives careful attention, however, it may be responsible for that pest of the suburbanite—the mosquito. Ornamental pools are of little interest unless they contain water plants of various kinds but, unfortunately, mosquitoes also prefer the pool that is more or less overgrown with vegetation. The garden pool, however, does not need to be a source of mosquitoes if simple control methods are applied.

How the ornamental pool or any other body of water produces mosquitoes can be explained briefly. The adult mosquito lays eggs on the water surface, several hundred at a time. In a day or two the eggs hatch into larvae or "wigglers," a stage in which they feed on organic matter in the water and grow in size. There is then a short resting or pupa stage during which the former wigglers are comma-shaped and float quietly on the water surface unless disturbed. Finally the pupa splits open and the winged mosquito emerges on the water surface, the whole cycle requiring from seven to twelve days, depending on the temperature and on the species of the mosquito.

Oiling of the water with kerosene or heavier oil kills the wigglers and pupae when they come to the surface to breathe. As this method kills water plants, it is not suitable for ornamental pools. Paris green diluted with 20 parts of hydrated lime and dusted on the water surface does not harm vegetation and will kill the larvae of the malaria-carrying mosquitoes; but because of different feeding habits the larvae of the more numerous mosquitoes which are merely pestiferous are not affected. For mosquito destruction, therefore, the pool owner must depend on the activities of fish.

Fortunately there are several kinds of fish that will eat mosquito larvae and pupae. Unfortunately, however, the goldfish is an uncertain ally in the war against mosquitoes, especially if the pool is of fair size and has many water plants; for the goldfish is mainly vegetarian in its diet, and the mosquito larvae are skilful at concealing themselves in vegetation. The common types of the goldfish are more useful than the sluggish fantails, telescopes and other fancy fish. They will be more efficient also if they are required to find the greater part of their own food and are not pampered by overfeeding. Occasional investigations should be made to determine whether the goldfish are successfully patrolling a pool. This can be done by dipping up water in a dipper or cup from the vicinity of the stems or leaves of water plants. This requires speed or the wigglers may escape.

Preferable to goldfish are various types of native fish. For the garden owner who lives south of a line through northern Virginia and Tennessee, the problem of what fish to use is easily solved. Half a dozen of the common top-water minnows (Gambusia affinis) placed in the pool in the spring should keep it clear of larvae and pupae. In the process they will increase enormously in numbers. If the pool is stocked later in the summer or fall, a greater number of minnows should be introduced, as most of the increase takes place in early summer. This minnow is an indefatigable eater of mosquito wigglers and is the most efficient fish yet found for waters having vegetation in them. Incidentally, because of its value Gambusia has been introduced from its native habitat in the southern states into Italy, Spain and other countries in which control of the malaria mosquito is an important public health problem.

Top-water minnows will not survive the winter outdoors in states north of those mentioned, and consequently they do not occur naturally in northern waters. Pool owners of the North who wish to obtain top-water minnows could probably commission southern dealers in aquarium fish to ship several dozen. A breeding stock might then be kept in aquariums in greenhouses during the winter for introduction in the outdoor pools in the spring. It would be easy to keep enough minnows throughout the winter to stock all the pools of a neighborhood. However, it should be mentioned that in small aquariums, goldfish and top-water minnows do not get on well together although they do well enough in large pools.

Artificial feeding of the top minnows, which would be necessary in a small aquarium, is also something of a problem. Since they are carnivorous, they do not thrive on goldfish food. If it is necessary to feed them, a special device is required. Bore holes one-half inch in diameter and one-half inch deep in one side of a piece of wood 6 inches long, 2 inches wide and 1 inch thick. Stuff hamburger steak into the holes and then allow the wood to float, hamburger side down. Since the minnows are top feeders, scattering chopped meat in the water does but little good, for the meat sinks to the bottom and is lost.

Other small fish which can be found in northern waters are of value, although not as good as the top minnow. The roach or golden shiner eats larvae but does not readily penetrate vegetation-covered waters. The mud minnow also consumes mosquito larvae but is rather scarce. The different varieties of sunfish are well worth placing in pools for their handsome appearance, and they will pay their way by keeping down mosquito breeding. The blue-spotted sunfish is especially good, and the common sunfish is considered by some investigators as ranking only second to the top minnow as a mosquito eater.

Whether sunfish and goldfish will live in peace and amity together depends on conditions. If the pool is of fair size with plenty of food for the sunfish there should be no danger to common goldfish; whether telescopes, fantails and other fancy fish would suffer is doubtful. In an aquarium under my observation, sunfish badly damaged telescope goldfish but did not molest the common variety. In a less restricted container it is likely that all goldfish would be safe.

While fish will do good work with water plants growing in the pool, it is possible to have such a mat of vegetation that larvae will develop to maturity in spite of the fish. Especially is this likely to happen if a green scummy growth, known as algae, appears on the water surface. Heavy algae growths are especially attractive to the malaria-carrying mosquito. Prompt removal of such surface mats should be the rule.

The pool itself may not be the only mosquito producer in the garden. Most pools have an

A pool overgrown with vegetation is especially favorable for mosquito breeding.

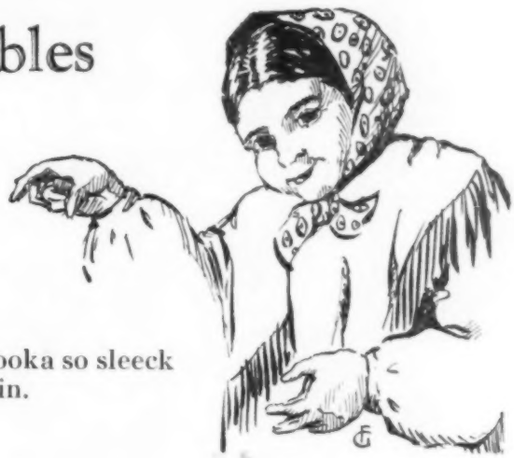
overflow. If it discharges into a sewer there will be no danger. If the discharge is into an open gutter or ditch, mosquitoes may result. Such ditches will require weekly applications of kerosene or other oil.

If oil is used, however, it should be applied in sufficient amount to form a thin continuous film over the water. Dipping will establish the presence or absence of larvae in gutters or ditches.

The supply pipe of the pool may cause trouble. I once searched for hours before uncovering a source of mosquitoes resulting from leakage of a supply pipe leading to an ornamental pool. The pool itself was completely controlled by fish, but the supply pipe passed through a pile of rocks on one side of the pool. A leak had developed in the pipe, resulting in several concealed puddles of water, each of which was full of larvae and pupae. Allowing incoming water to trickle over rocks into a pool may cause similar conditions although careful construction can eliminate this danger.

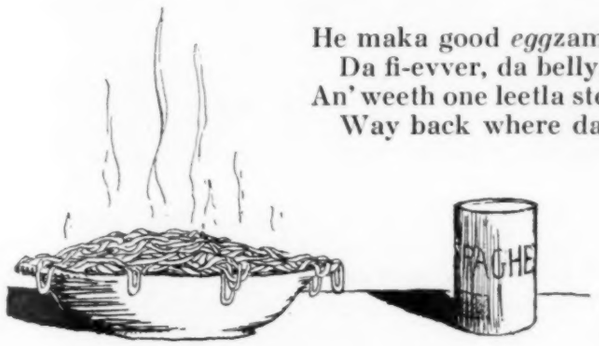
The householder should realize that ornamental pools are not the only producers of mosquitoes around a residence. Rain water, caught in barrels, cans, buckets and tire casings, and roof gutters choked with leaves are frequently found to breed hundreds of mosquitoes. Ice-water drips, the trough for the family cow, waste-water ditches, poorly covered cesspools, leaking water meters and cutoffs should be scrutinized when mosquitoes are numerous. Even flower vases inside houses have been found full of larvae. Sweet potato vines grown from roots held in a jar or bowl are almost sure to breed mosquitoes if they are left on open porches. Since the pestiferous mosquitoes do not travel far from their breeding places, their presence indicates breeding close by. A search for the larvae will usually allow destruction of the source, and peace and comfort will result.

New Vegetables



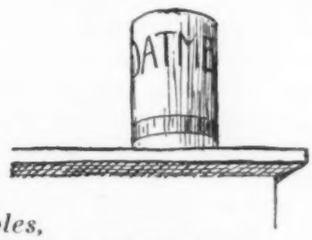
One morna las' week when da do'tor
Ees come maka veesit my Jo—
Was leetla bit seeck—he see pretta queeck
How fasta my Eengleesh ees go.

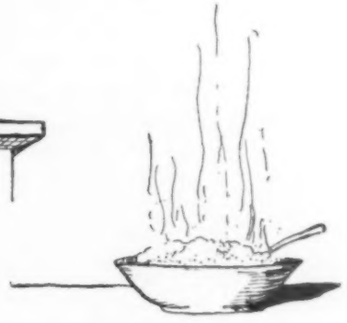
He maka good *eggz*amination—
Da fi-evver, da belly, da skin,
An' weeth one leetla steeck he ees looka so sleeck
Way back where da tonsil baygin.



He aska me lotsa da question;
I ondrastan' all he ees say,
How moocha I geev her da oil of cod leever
An' orange juice mos' evra day;

An' den he ees ask "vege*tables*"—
Das word I ees learna las' week!
I feel vera proud, an' I show heem out loud
How vera good Eengleesh I speak:





"O gosh, I geev *lot* vege*tables*,
Like nice Crim o' Whit, corn meal mosh,
Hoat Meal, chickensoop; sometam open up
Nice can-a spaghetti, ba gosh!"

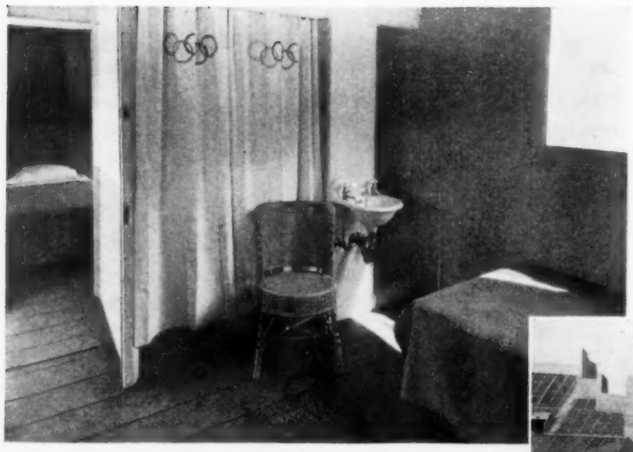
Das maka surprise Meester Do'tor,
He smila out louda an' say,
"Das lotta boloney for Meesis Cardoni;
She spikka new word evra day!"

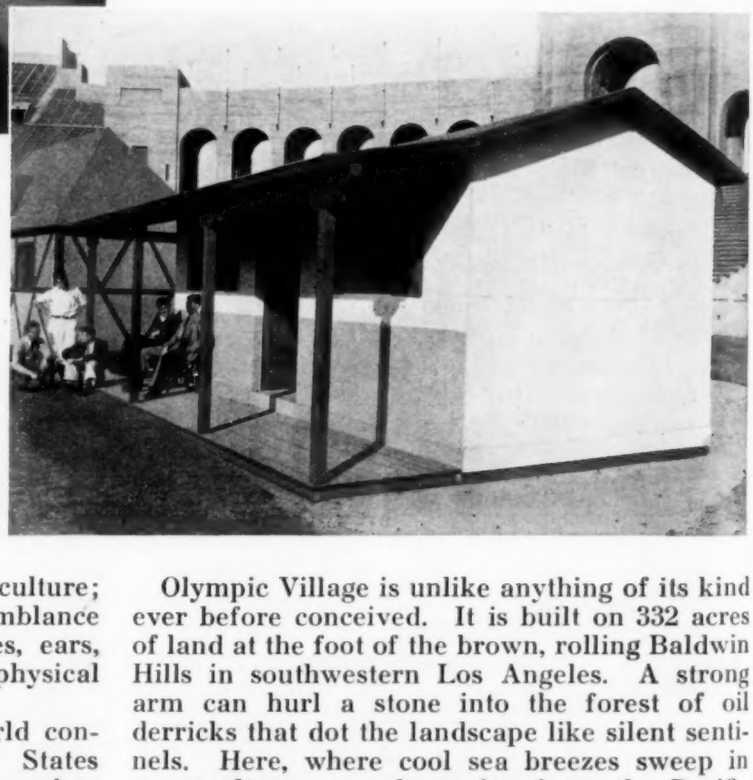
—H. G. BULL.

Olympic Village

The Answer to an Athlete's Prayer

By MEL WHARTON





Six hundred bungalows will afford living quarters for the Olympic athletes. Each bungalow has a shower bath, four single beds, two wash bowls, running water, electric lights and a baggage room.

SOME 2,500 athletes will foregather at Los Angeles this summer to celebrate the tenth of the modern series of Olympic Games. These young men and women will hail from fifty different nations of the earth and will therefore represent wide variations in customs, mode of living, physique and culture; but in many ways each will bear resemblance to the other. All will have teeth, eyes, ears, arms, legs, hearts, lungs and the physical requisites of normal human beings.

To care for the comforts of this world conclave of athletic talent, the United States Olympic Committee has arranged a complete system of medical and sanitary supervision. Perhaps nothing on so large or thorough a scale has been attempted at any previous Olympiad. Added to several innovations will be the latest approved methods of treatment and service, available every moment of the day and night. Male athletes will be sheltered in Olympic Village, an especially designed and constructed city, built solely for this mammoth international sports spectacle.

Olympic Village is the answer to the athlete's prayer for quiet, privacy and sanitation. It was designed with these ideas paramount. After the games the village will be dismantled and will go the way of all temporary structures.

Olympic Village is unlike anything of its kind ever before conceived. It is built on 332 acres of land at the foot of the brown, rolling Baldwin Hills in southwestern Los Angeles. A strong arm can hurl a stone into the forest of oil derricks that dot the landscape like silent sentinels. Here, where cool sea breezes sweep in every afternoon and evening from the Pacific Ocean half a dozen miles to the west, has arisen as if at the gesture of a genie, a magic sports community for 2,500 world athletes.

Six hundred bungalows facing new and clean streets will be "home" for the visiting male athletes. Each house occupies a space 10 by 24 feet and contains a reception room, two sleeping rooms, a baggage compartment, shower bath, running water, electric lights, four single beds with coil springs and fluff mattresses, two wash basins, drinking water, bedding, chairs, tables and draperies. Every delegate to the games will have his bed in a light airy room.

It is a sad but true commentary that previous Olympiads have drawn bitter invective from

managers of competing teams. Our own athletes have done their share of backbiting at arrangements on foreign soil. While it is needless to say that perhaps no Olympiad ever will be entirely free from criticism, it is the hope of the local Olympic committee in charge of accommodations to make the Tenth Olympiad the model for future international sports meets of a similar nature.

All the Comforts of Home Will Be Provided

Every effort has been bent toward enhancing the comfort of the athlete. The bungalows are built of an insulating material which is effective against exterior heat and cold. Grassy lawn spreads everywhere through the village. A wire fence completely surrounds Olympic Village. In addition, guards will be placed to see that none save those having business inside may gain admittance. There will be no "gate crashing" to annoy the residents of this sports city. Olympic Village has its own post office, bank and a motion picture theater where each night will be shown reels for amusement and films reviewing the previous day's Olympic competitions.

Dr. Sven Lokranz, medical director for the public schools of the city of Los Angeles and president of the Ling Foundation, is chief medical adviser for the Tenth Olympiad. More than 300 physicians, dentists and American Red Cross nurses and workers constitute the staff that will carry out the well organized program of health and sanitation.

Headquarters for the first aid organization will be Olympic Village. A complete hospital unit has been provided, consisting of an infirmary with x-ray, physical therapy, laboratory and emergency services. Thirty-three physicians will have charge of first aid during the progress of the games. Each nation represented at the games will have its own examination rooms, and quarters have been provided for foreign physicians and surgeons who may accompany their teams to California.

The corps at the village hospital will consist of a chief sanitary inspector, two physicians, two male nurses, one physical therapist and one clerk. At least one physician and one nurse will be on duty at all times. In addition there will be twelve consultant surgeons, a medical advisory board of sixteen physicians, six consultant dentists, as well as a heart committee, a lung committee, a psychology board and a physical therapy section. Under the jurisdiction of Dr. Lokranz, but located at the women's headquarters, will be a woman physician and also a day nurse and a night nurse.

The central bath and rubbing pavilion in Olympic Village affords a part of the training and health facilities. Each athletic contingent will also have individual conditioning rooms. A central hot and cold shower room and a steam room are also provided. These facilities are to be open on a twenty-four hour schedule.

The aching tooth or oral cavity that develops during the games will be taken care of on the spot at Olympic Village. A "healthmobile" loaned by the Los Angeles board of education will be used for this purpose. Healthmobiles are motorized dental offices, complete and modern in every respect. They are used in the Los Angeles public school system to teach and provide oral hygiene. Several dentists will be continuously on hand to provide emergency service.

Cooks, Kitchens and Champions

One of the most common complaints heard from contestants at previous Olympic Games has centered about the question of food. Highly trained athletes with nerves aquiver are easily set askew mentally and physically by dietary changes. The local games committee does not want any such disruptions. It has provided forty private dining halls and cooking compartments. These are under four roofs in a building totaling 1,200 feet in length, but are so arranged that each nation's athletes and corps may be together. Competing nations may either bring their own chefs or have them furnished "on the ground." Several months ago the culinary needs of each group to be represented were received by the Olympic organization. Ample supplies of imported foods from foreign countries will be on hand when this biggest of all amateur sports events opens July 30 at Los Angeles. Trainers and diet specialists believe that this feature will

Olympic Village resembles a newly built subdivision with grassy lawns and trim bungalows.

be far-reaching in the promotion of the physical and mental welfare of competitors.

The sports contests held at the Tenth Olympic Games will take place before nine stadia. First aid stations and physicians will be at each of these to attend any one injured or ill, whether participant or spectator. The main Olympic stadium, which seats 105,000 persons, will have special facilities including fluoroscopes for x-ray examinations. Five physicians will be on hand during both day and night contests, and ambulances will be waiting near by. Ambulances and stretcher bearers have also been assigned to all other stadia. Trained resuscitation crews will have regular positions in the aquatics, rowing and yachting races and competitions. Physicians will have power launches in which they will patrol the rowing and yachting courses.

It was necessary to effect special arrangements for such events as the 31-mile walk (the longest race in the games), the Marathon (a race of 26 miles, 385 yards), the bicycle road race and the 26-mile equestrian cross-country and obstacle race. Obviously, no central station can be set up for such events. First aid posts will be placed at regular intervals along such routes, each supported by an ambulance. Physicians in automobiles will closely follow the athletes and be ready to give immediate attention to those in need. Any athletes dropping out of races will be picked up in automobiles and escorted back to Olympic Village.

The Tenth Olympic Games will be held for sixteen days—from July 30 to August 14, inclusive. Health plans for this sports gathering provide vast contrast with the medical facilities of the ancient festivals held once every four years on the plains of Olympia and dedicated to the goddess Hera. In those times there were no corps of physicians and assistants to test the heart and respiration of contestants. Today the health of the delegate outweighs every other consideration.

To permit an athlete to enter the strenuous competitions of the Olympic Games against the advice of his medical advisers would stigmatize a coach for life. Probably many a famous athlete of the olden days had his days cut short because of such lack of checking-up; this, however, was not the fault of the athletic authorities, for scientific methods of medical supervision were then unknown. Moreover, a youth was too often adjudged a weakling who could not endure the grind of the games. Rather than suffer humiliation, many athletes no doubt carried on, with dire results. But under the close scrutiny of the health advisers of the modern Olympic Games, no contender is permitted to dissipate his health and strength beyond the reasonable limits of his physique.

The ancient Olympiads were often the breeding grounds for disease and infection, but modern science has lifted the games to a high sanitary plane. Special drinking water and cups are provided. Every article that must be widely used is thoroughly and regularly disinfected. There are electric refrigerators for foods, correct ventilation in all structures and controlled temperatures.

However, the lack of such facilities and supervision at the original Olympic Games should not be thought of as delinquencies. The people of those early days had crude forms of medicine and surgery, but they were lacking in scientific background. Sanitation, too, suffered for the same reason. A comparison of the ancient with the modern Olympiads gives one a good idea of the progress in medicine, hygiene and sanitation. In gazing back into the athletic history of yore, one cannot but be impressed with the manifold advantages the youth of today has over his athletic ancestor of twenty centuries ago.

"Doctor? It's Mrs. Jenkins—you'll have to send us a nurse. I can't keep this up. I can't."

MAGIC by the Hour

By

Dorothy Deming

MRS. JENKINS dropped into a kitchen chair with a sigh. Things could not be worse. "Smile, Beulah Jenkins," she told herself sternly, "smile or you will drown in your own tears! Smile!"

She managed an artificial grin, held it for a moment and then began to cry softly, steadily, silently, rocking her body back and forth on the straight chair.

"Beulah! Beulah!" A weak, high voice called from a distance.

Mrs. Jenkins dashed her apron over her face, jumped up and hurried from the room.

"Coming, Mother," she answered, and then under her breath, "Now smile!"

At the opposite end of the hall from the kitchen was a fair sized bedroom—the typical two-windows-on-a-dark-court affair of the modern apartment house. Mrs. Jenkins reached the bedroom, and the forced smile on her face became genuine as she stepped into the room.

"What is it, Mother dear?"

The old lady on the bed turned toward her. "I'm sorry to bother you, Beulah, when I know you are busy with the breakfast things, but I can't find my glasses anywhere. I had them last night and—"

"I'll find them, Mother. Wait, don't lean over the bed that way. Here they are on the dresser with your book."

"Oh, thank you, dear. Now I won't call you again until noon if I can help it, I promise you!"

"Don't be foolish, Mother, sing out any time." She straightened her mother's bedding a little. "You know, I ought to give this room a good turning-out, make your bed up all fresh and give you a bath. You had one every day in the hospital. And your hair! My dear, it's getting all matted. I must get to it this afternoon."

"Now Beulah, you've got your hands full. Don't worry, it won't be long before I can take care of myself. Run along, this is wash day!"

Mrs. Jenkins returned to the kitchen to face the stack of soiled breakfast dishes, the pile of dirty clothes waiting to be put to soak and a mile-long list of groceries to be bought down town later. It was wonderful to have her mother safely over her operation and back from the hospital, but it was a little hard to find her such an invalid and to have to manage the house without a maid for the first time in her married life. Little Alice, her daughter, helped all she could after school and Henry had done everything a husband could, but he was tired when he got home from work—work which had never before paid so little or been so hard. Beulah could not bring herself to ask her husband for a nurse for her mother. Nurses cost so much, and Henry had certainly been generous about the hospital bills. No, there was nothing to do but grit one's teeth and smile.

Dishes washed, clothes soaking, beds made, plants watered and dusting done, Mrs. Jenkins stopped a moment at her mother's bedside and kissed her.

"Off to market now, Mother. Anything I can do for you?"

"No, dear. Stay as long as you like. It's a nice day—what I can see of it!" she laughed ruefully.

Mrs. Jenkins hurried off. She would have barely time for shopping before she must be back to get Alice's lunch. Rush, rush, rush all the time, and all the time the gnawing worry that her mother was not getting the care she really needed. The doctor had prescribed sunshine and fresh air, but how could they manage? Maybe if she could buy a wheel chair, they could wheel her into the elevator and up to the roof. At the next telephone booth, Mrs. Jenkins called up a hospital supply store.

"How much? What? Goodness! I can't pay that much. Do you rent chairs? No? Well, good-by."

Note: ask the doctor where to rent wheel chairs.

Note: ask the doctor about mother's diet.

Note: ask Henry to rig up a back rest for mother's bed.

Note, note, note! Remember this, remember that.

There was not even a forced smile on Mrs. Jenkins' face by 4 o'clock that afternoon. She was too tired to think of her face or to care about anything.

The doctor came at 5. He glanced at the tumbled bed, Mrs. Brewster's tangled hair and Mrs. Jenkins' flushed face. As he was leaving, he said to Mrs. Jenkins: "Don't you think you'd better have a nurse come in for a week or two? Your mother must not overdo. It will be three or four weeks before she regains her strength. I know you have your hands full."

"But Dr. Phillips, how can we have a nurse? We just haven't the money. Henry's salary has been cut, and we have had pretty big bills in the last two months. No! I simply can't ask Henry to pay for a nurse for mother. I'll get along all right. You didn't find anything wrong with Mother, did you?"

"No-o-o."

"You did? What?"

"Nothing really wrong, Mrs. Jenkins, only she needs nursing; that's the truth—the little attentions, the little extras she has grown used to in the hospital." Dr. Phillips' face brightened. "I tell you! There's an organization in town that sends out graduate nurses by the hour. Let's try it! You could have a nurse come in once a day, fix up your mother and help her up in a wheel chair so that she can get some sun. The nurse could show you how to fix things."

"How much would that nurse cost?"

I don't know. I'll find out and let you know. Good night!" And Dr. Phillips was gone.

The next day was rainy. Henry overslept, and Alice couldn't find her rubbers. Everything went wrong, and there was a wild flurry to get her husband off to work in time and Alice to school. Mrs. Brewster had not slept well, seemed feverish and did not eat any breakfast.

At 9:30, after trying to make her mother a little more comfortable, Mrs. Jenkins called Dr. Phillips by telephone.

"Doctor? It's Mrs. Jenkins. You'll have to send us a nurse. I can't keep this up. I'll borrow money on my life insurance to pay for her. I can't—I can't—" She broke into sobs.

"Now, now, don't do that—everything's going to be all right. A nurse is coming to you at 10 o'clock to be with your mother for two hours. The fee is $2.50. After she has seen how things are, she'll arrange with you for future visits, so buck up! This is the zero hour. After this, everything will be all right. Let me know how things go." He hung up on her eager thanks.

At 10 o'clock the doorbell rang. A lady in a dark, tailored suit, carrying a small black bag, asked to see Mrs. Jenkins.

"I am Mrs. Jenkins, and are you the nurse? Oh, come right in! I'm at my wits' end. This living room—look at it! I'm so sorry! Mother seems very weak this morning. She hasn't taken any breakfast, and—oh, do excuse me—do you want to go right to her room? I'm so tired I can't think straight."

"In just a minute, Mrs. Jenkins, but first I want to make a suggestion. I know you are weary, too weary to talk, even, and Dr. Phillips has given me complete orders for Mrs. Brewster's care. Won't you just show me her room, the bathroom and where the linen is kept and then go to your own room and lie down? I'll call you in time to get lunch."

"Oh! That sounds heavenly. Really, won't you need me?"

"No, not today; maybe tomorrow I'll want to show you something about your mother's care,

"Why! It's a different room!" she exclaimed.

but today we want you to rest, or I'll have two patients on my hands instead of one! By the way, my name is Miss Coburn, and here is my registration card."

"Oh yes, thanks. Here, let me take your coat."

"No, not even that, thanks. I'll just slip it off here and scramble into my smock. There, now, if you'll show me around—"

Two hours later, Miss Coburn stepped reluctantly into Mrs. Jenkins' cool, darkened bedroom and found her fast asleep on the bed. It seemed cruel to waken her, but Miss Coburn had a 2 o'clock appointment on the other side of the city.

"Mrs. Jenkins!" she called softly.

"Yes—oh!" Mrs. Jenkins stared, still in the daze of sleep. "Oh yes!—I have had such a sleep! What time is it?" She started up from the bed.

"It's 12:15. I've set the table for lunch and prepared some sandwiches and cocoa for you. Your mother has had her lunch and is asleep."

"What! You have lunch ready for us? Why, that's too good; you shouldn't have done that."

"No, I know, and of course we really are not supposed to prepare meals, but I finished with your mother's care in time, and I thought I might as well fix enough food for all when I set her tray."

As she talked, Miss Coburn was folding her smock, returning various little articles to her black bag, preparing to leave.

"If you will just step in here, Mrs. Jenkins, I'll show you how I've arranged things for your mother."

Mrs. Jenkins went with the nurse to her mother's door.

"Why! It's a different room!" she exclaimed in an astounded whisper. "Where did you find the back rest? Oh, it's a chair, sure enough! And I like her bed turned that way. It will give better light for reading. And her bedside table, her hair, everything is so fresh! Miss Coburn, you are a magician!"

"Not quite," Miss Coburn laughed softly, "but I want to show you these things. Here are my notes for Dr. Phillips in this envelope on the dresser. Please give them to him when he comes. He ordered an enema for her today, an alcohol rub and, of course, full general care—that means bath, bed made, hair combed—oh, lots of little things. Then, here is a list of foods for Mrs. Brewster. I've made out this plan for today and tomorrow, and here are recipes for beef broth and egg nog. Here is the telephone number of a store that rents wheel chairs at 50 cents a week. The doctor thought we might be able to get your mother up to the roof on sunny days."

"Well, this is simply too good to be true. I do thank you so much, Miss Coburn."

"Over on the head of her bed I've rigged up a shoe bag—I found it in your linen closet—to hold her toilet articles, glasses, pencil and paper and the things that are always getting lost in bed. I found a bell for her table, so she can ring for you.

"She has a little fever today, but if she plays invalid for a few days more, I think she will be all right. Tomorrow, you won't need me so long—an hour perhaps. I'll show you then how to care for her back. I think she'll sleep now until late afternoon; then she can have an egg nog."

"You've thought of everything! I can't tell you what this means to me. I feel rested already. What time will you come tomorrow?"

"About the same time, and then after that I'll probably have to switch you to the afternoon, as I have far sicker patients than Mrs. Brewster who need me in the morning. We can arrange that later. Our charges are $1.50 for the first hour, and $1 for each additional hour or fraction of it. You needn't pay me now. The office will send a bill. I must hurry away, I'm sorry. Good-by!"

"Good-by, thank you again!"

Mrs. Jenkins rushed to the telephone.

"Dr. Phillips? She's a magician! I'm a new woman. Why, she's arranged everything! Why didn't you suggest having her when Mother first came back from the hospital? She even gave Mother her lunch! What is this organization? Every one ought to know about it! Her charges are reasonable, and she does so much so well! Why Doctor, she—"

"Here! Hold on! I'm getting jealous, also deafened! I'm glad if you liked her."

"Like her? She made me go to bed and rest! She—"

"All right, I'll be in in a few days; she can report to me."

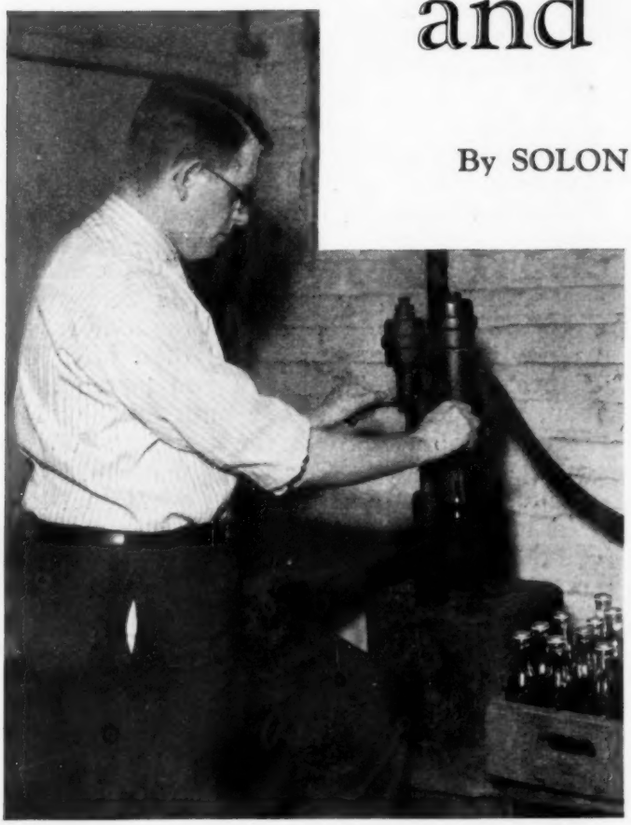
"But Doctor, have these nurses by the hour been available always?"

"Yes and no. I understand that a great many cities have them now. All one has to do is call the Nurses' Registry or the Visiting Nurse Association, and a nurse will be sent out. One of the few blessings of the depression—well, good-by!"

"Good-by, Doctor." And Mrs. Jenkins hung up the receiver, smiling.

Fruit Juices, Ades and Pops

By SOLON R. BARBER



Carbonated beverages are, in effect, pasteurized.

MORE than 11 billion bottles of nonalcoholic beverages were consumed last year by Americans, most of whom were under 50 years of age; and this huge consumption was by no means solely for the purpose of providing ammunition to convince visiting baseball umpires that their judgments were preposterous and unwelcome to local fans. The baseball season is not long enough for that!

Simply as an exercise in arithmetic, observe this figure again. Estimating the population of the United States at 120 million, it would mean that every man, woman and child in the country drank about ninety-one bottles of these beverages last year. That constitutes a bottle every four days, but one must remember that the 120 million include many infants who as yet do not indulge in beverages of this kind, as well as many old persons who probably are not soft drink addicts. At any rate, the estimated value of these drinks was more than half a billion dollars. Into this huge national soda pop bottle went the following ingredients: 250,000 tons of sugar, 5 million pounds of fruit acid, 50,000 pounds of harmless artificial color, 1 million gallons of flavoring extract and 400 million gallons of carbonated water.

So much for last year. J. W. Sale, beverage expert in the Federal Food and Drug Administration, says he is confident that the total consumption of fruit juices and other forms of nonalcoholic beverages will reach a figure, in 1932, higher than that for any previous year. One reason for this, according to Sale, is that since the Mediterranean fruit fly quarantine was lifted in Florida and neighboring southern sections, the farmers of that region have resumed the harvesting of citrus fruits on a large scale and will convert much of their crop into canned and bottled fruit juices. Growers and packers recently have learned that canned, frozen and bottled citrus fruit juices find a ready market in the United States. Several large companies now extract the juice from millions of boxes of oranges, chill this juice to the consistency of soft sherbet, place it in heavy paper cartons similar to those used for cream and ice cream, seal it tightly, freeze it hard and store it until needed. This frozen product is shipped to many parts of the United States. Many dairies now deliver this frozen breakfast juice with the milk each morning. All the housewife has to do is let it thaw out until it is ready for the table. Packers also can a limited quantity of orange juice.

Canned grapefruit juice has become quite popular within the last year or so. It seems that the changes which take place in processing and in storage are less apparent in canned grapefruit juice than they are in canned orange juice. This is caused, no doubt, by the more pronounced flavor of the grapefruit.

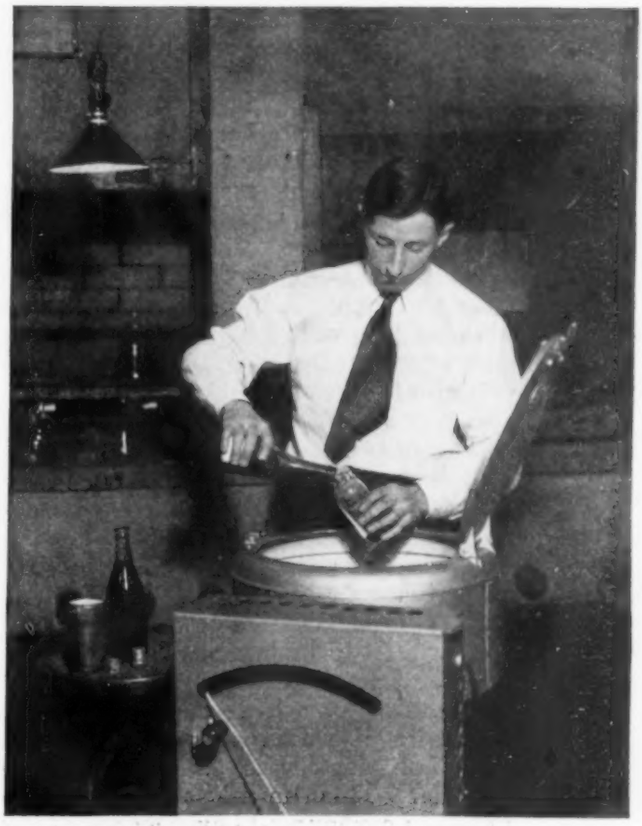
At present it is not definitely known just how long frozen orange juice will keep without losing its flavor. Investigators are now working on that problem. Meanwhile, carload after carload of perfectly wholesome frozen orange juice and canned grapefruit juice is rolling over American railroads to consumers in all parts of the country.

It is a far cry from the old days when the annual consumption of bottled beverages was at an extremely low figure. Then the manufac-

turers were not nearly so careful about how the beverages were made nor were they greatly concerned about what went into them. Many persons made drinks in their own home. Some years ago I spent my summers on a Wyoming cattle ranch where hay was put up for winter use. Recognizing the productive value of contented hay pitchers, the women, some time during the afternoon, would mix up a crock of so-called lemonade. This stuff looked like lemonade and tasted like lemonade, but it was nothing but citric acid and plenty of sugar added to cold spring water. It tasted fine and cool, and the men liked it. But before the reader blames the women for "putting one over" on the hired men, he should remember that it would have been necessary to haul lemons some 75 miles through a canyon and over a desert to give the hands the genuine article.

At present, the manufacture of beverages honestly made and truthfully labeled runs into a production value of more than half a billion dollars annually. This industry has gone a long way since the days of the first strawberry sodas served over the drug store counter. Today, fruit ades, fruit juices or sodas can be purchased anywhere from the roadside produce stand or the filling station to the grocery store. They may be had in containers which vary all the way from the tall glass filled from the soda-fountain faucet to the paper carton, or they may be democratically quaffed from the bottle.

As these nonalcoholic beverages have increased in value and volume of production, they have also increased in variety. Some drinks, such as sparkling bottled cider and bottled grape juice, are pure fruit juices. Others, belonging to the ade class, contain 15 or 20 per cent of fruit juice. The color, sweetness and tartness of these ade drinks are often improved by the addition of small quantities of non-injurious artificial color, sugar and citric, tartaric or other fruit acid. But when these added ingredients are present in the beverage, the Federal Food and Drugs Act requires their presence to be declared on the label. So-called nonalcoholic cordials, such as crème de menthe, are merely sugar syrups with added flavor and color. These bear names—benedictine, vermuth, kümmel—reminiscent of the past. Nonalcoholic cereal beverages are also popular and are commonly made by brewing beer and then reducing the alcohol content to less than one half of 1 per cent by heating under reduced pressure. Most nonalcoholic beverages are bottled sodas, and the most common of these are ginger ale, root beer and sarsaparilla. The base is practically the same in all sodas; it is called soda base and consists of carbonated water, sugar syrup and a fruit acid or phosphoric acid. According to J. W. Sale, different combinations of ingredients are worked out to get individual brands of drinks which appeal to the sight, smell and taste. When these sodas are ready to be served, they usually contain, in addition to the soda base, small quantities of harmless colors and flavors.



The cacao mass is separated from chocolate flavored beverages prior to chemical analysis.

Imitation "grape" beverages are tested to determine the amount of artificial grape flavor.

The ingredients used to flavor soft drinks consist of aromatic substances derived from various parts of plants. Buds of flowers, cloves and chamomile; fruit and parts of the fruit, vanilla beans and peel of citrus fruits; seeds, grains of paradise and celery; roots of ginger and sassafras; the bark of wild cherry and cinnamon, and stems and leaves of sage and peppermint often are used in drinks. Fruit extracts, the natural flavors, are becoming more and more popular. As the manufacturers have learned how to combine fruit extracts and natural fruit juices more successfully into their beverages and have eliminated chances of spoiling, the use of synthetic flavors, which was so common in our yesterdays, has decreased. Synthetic colors and flavors were once commonly used. Following the enactment of the national pure food laws, however, federal enforcing officials discouraged the use of certain synthetic products (nitrobenzol, for example) because of their injurious effect on health. Today the buying trend is toward fruit juices, with or without added sugar, and fruit drinks containing from 15 to 20 per cent of pure fruit juice.

Perhaps you have wondered what makes soft drinks fizz. The answer is simple enough—carbon dioxide. This harmless chemical so generally used in carbonated beverages not only gives the drink a pleasant sharp taste but also has a pasteurizing effect. But do not get the idea that carbon dioxide can be depended on to purify a beverage made with polluted water! Surveys of domestic and imported beverages conducted periodically by federal and state food officials check up on the kind of water used in the drinks as well as on the purity of the other ingredients.

Most soft drinks are pleasant to the taste and harmless to health. However, in the enforcement of the Food and Drugs Act, government officials occasionally find some that contain boric or other preservative acids; unpermitted coal-tar dyes, sometimes containing harmful impurities; metallic salts, such as salts of zinc or copper, coming from containers or equipment used in the manufacturing process, and saccharine, which is a sweetening agent of coal-tar origin, having no food value. The use of "soap bark" to produce a foam or bead on the drink is frowned on by federal agents. The use of artificial color, however, is permitted, provided only certified coal-tar dyes or harmless vegetable colors are used. The buyer who has a prejudice against artificial color may guard against a drink containing it by reading the label declaration on the bottle or the statement impressed into the bottle cap.

Since the great bulk of the soft drinks produced in the United States is consumed by children, mothers are justified in asking the question, "Are they safe?" As a matter of fact, any food product that is manufactured and consumed in the amount of 11 billion bottles a year deserves the attention of the public as well as of all food officials and food experts. The traffic in soft drinks is under rigid control by state and federal pure-food and health officers who check up on the honesty of labeling, the possible presence of harmful ingredients and the sanitary quality of the liquids. The National Food and Drugs Act requires, among other things, that the labels of beverages shall not bear any statements or designs which are false or misleading in any particular, that imitations shall be labeled as such and that the labels of bottled beverages shall bear a statement of the quantity of the contents. Many states have food laws patterned after the federal statute. Therefore, if the buyer will take a few seconds to glance at the reading matter on the crown cap or bottle label, she can inform herself as to the kind of beverage she is buying and govern her purchases accordingly. For example, if the buyer wants a pure grape juice, she should look for a product labeled as such. A grape juice sweetened with sugar must be labeled as containing added sugar, and grape beverages containing a substantial amount of real juice, sugar and water may be labeled with names indicative of grape ingredients but not as "grape juice." Finally, a beverage containing a synthetic flavoring ingredient and an artificial color and passing for grape beverage or any other natural fruit drink must be labeled in such a way as to disclose its real character.

A Century of Service

The Story of the Wills Eye Hospital

By

MADELIN BLITZSTEIN

Architect's drawing of the new Wills Hospital to be opened this year.

ON ITS one-hundredth anniversary, one of the oldest institutions in the world specializing in ophthalmology, the science of the anatomy, physiology and pathology of the eye, moved into new quarters. It is now the largest hospital anywhere devoted exclusively to ophthalmology. On April 2, 1832, the cornerstone of the Wills Hospital in Philadelphia was laid. During its century of outstanding and progressive work in its chosen field, this hospital has "witnessed the birth of ophthalmology, its emergence as a highly developed and specialized science of today," and has as a school been of perhaps greater influence than any other institution in educating physicians in that branch of medicine.

The building of the original Wills Hospital is standing today, with additions of many wings and clinic rooms made necessary by the increasing numbers of patients who have been cared for under its roof through the years. But the scope of the hospital has become so wide and its influence on eye surgery has been felt over such a great area that its present enlarged quarters are no longer adequate.

Its original endowment and the private donations which have come to it from private citizens who have felt its great worth to the community and to humanity at large, plus the appropriations which it gets from the state of Pennsylvania, were not sufficient to warrant the building of a new institution.

Fortunately, Cyrus H. K. Curtis, publisher, wanted the site where the hospital has stood for many years. He paid $1,100,000 for the ground, with the intention of building a huge musical center for Philadelphia. With this money, the directors of the Wills Hospital were able to purchase another piece of land, conveniently located. Plans were drawn for a $290,000 six-story building, equipped with every modern hospital convenience. Work has been started on the new hospital, which, when it opens late in 1932, will have room for 250 beds. It will be able to take care of approximately 50,000 outpatients annually, on a par with the larger general hospitals in the city.

It is most appropriate that such an important medical institution as the Wills Hospital should have been born in Philadelphia, for it was in the Quaker City, in 1765, that the first college medical department in the country was established—that of the University of Pennsylvania. The famous Dr. John Morgan was the founder of this department and with him were associated such great medical minds as Drs. Philip S. Physick and Philip Syng Dorsey.

In 1792, Dr. Physick made a name for himself and the university by his extraordinary skill as an eye surgeon, while his gifted contemporary Dr. Dorsey forced the medical world to "sit up and take notice" because of his marvelous dexterity in the extraction of the opaque crystalline lens, an operation necessary in cases of cataract.

Although many laymen are under the impression that cataract is a growth over the eye which impairs the sight, there is no basis for this erroneous idea. In cataract the lens of the eye is so impaired that light cannot penetrate and

Wills Hospital, founded one hundred years ago.

the patient cannot see. In order to cure cataract the entire lens must be removed by an extremely delicate operation. After this is successfully done, the patient is fitted with proper glasses, and sight is restored.

In 1818, Dr. William Gibson of Baltimore increased Philadelphia's fame as an eye center. He came to the University of Pennsylvania and startled the medical world by being the first surgeon in the country to do a convergent strabismus operation. These three pioneer eye surgeons, Physick, Dorsey and Gibson, had all been trained in the schools and hospitals of London and Edinburgh, where eye surgery was far more advanced than it was at the time in America.

Although the Wills Hospital is one of the oldest eye institutions in the world, it cannot be strictly called the first institution devoted exclusively to eye work. Moorfields Eye Hospital, founded in London in 1805, holds that signal honor for all time. In America, Dr. Elisha North, who was a graduate of the University of Pennsylvania and a pupil of Dr. Lemuel Hopkins of Hartford, Conn., began operating on the eye in 1813. Four years later he opened the first eye infirmary in America in New London, Conn. According to Drs. William Campbell Posey and Samuel Horton Brown, both members of the Wills Hospital staff, who have just written a book called, "The Wills Hospital," Dr. North's infirmary was, accurately speaking, the first ophthalmic institute in this country.

Early History of Ophthalmology

An eye clinic was opened in New York in 1820; an abortive attempt at an eye institute was made by Dr. George McClellan in Philadelphia in 1821, and another was started in Massachusetts in 1824. In general, however, the knowledge of eye surgery and treatment of diseases of the eye was at a low ebb in America at the opening of the last century. In the medical schools, two or three lectures on the eye were considered a sufficient background for the student. Eye surgery was not thought of as a specialty, and many disastrous operations resulted in consequence of this attitude.

Dr. George Frick of Baltimore was the first man to do anything constructive to remedy this serious deficiency. A pupil of Dr. Physick, who inspired great work in this field, a graduate of the University of Pennsylvania and a pupil as well as a close friend of the eminent Prof. George Beer who was doing marvelous eye work in Vienna at that time, Dr. Frick organized a special clinic for diseases of the eye in the Baltimore Dispensary in 1823. He gave the first special course on diseases of the eye at the University of Maryland, and he was also the author of the first American book dealing only with the eye, called, "A Treatise on the Diseases of the Eye."

The Founding of Wills Hospital

The foregoing attempts to establish treatment of the eye as a scientific speciality were the only important events which preceded the opening of the Wills Hospital. An interesting story is attached to the founding of this institution. Although it filled a great scientific need and led directly to great advancement in the progress of eye surgery and treatment of eye diseases, it was founded not by a medical man or even by a person actively engaged in public affairs but by a humble lonesome grocer.

In 1800, James Wills, Jr., a devout Friend, was living modestly in Philadelphia and working industriously in the grocery business. He was associated with his father, who had been born in England and had come to the city at an early age. James Wills, Sr., a Quaker like his son, had been a coachman to Anthony Benezet, a noted French philanthropist of the eighteenth century, but had given up this service to go into the grocery business with an initial capital of $10.

The grocery business of the Wills, father and son, prospered; but they adhered to the Quaker faith, shunning any kind of publicity and living modestly, even frugally. In 1822 the elder James Wills died and left his money and his business to his son.

James Wills, Jr., carried on in his father's footsteps. Worldly pleasures and society interested him not at all. He lived on almost nothing a year, remained a bachelor and had no one to support except his own ascetic self. He never even had a picture taken.

It has been estimated that he spent $400 a year on his personal expenses and gave $1,500 annually to various philanthropies. When he died, three years after his father, in 1825, he left an estate of $116,000; he stated in his will that all except a few minor legacies should go as a city trust for founding the Wills Hospital for the Relief of the Indigent Blind and Lame. His will was penned in biblical phraseology, for he had been a diligent reader of the Holy Book.

The collateral heirs objected to the bequest, but their objections were overruled, and the hospital was founded. Dr. Joseph Parrish became the first president of the board of managers of an institution which has been serving the community for a century.

In 1825 there were 138,000 persons living in Philadelphia and there were only sixty-nine doctors and twenty-five "cuppers." Perhaps the leading physician of the day was Dr. Joseph Parrish, who, besides being admired and respected as a doctor, was loved for his philanthropy and sympathy for the poor and needy. Many commentators have wondered why James Wills, Jr., a lonesome man with no friends and no social obligations to his fellow men, should have left his fortune to a great charitable enterprise. The only answer which historians can volunteer is that he was influenced by Dr. Joseph Parrish, who was his neighbor, physician and only confidant. In his daily rounds through the Pennsylvania Hospital, Dr. Parrish knew the need for such a hospital.

Whatever the true reason for Wills' bequest, Thomas Ustick Walter, the architect, was ordered to draw up plans for the Wills Hospital. The site decided on was a plot of ground opposite Logan Square, a beautiful part of old Philadelphia, where the indigent blind might sit as they waited their turn to be treated. On this square, too, the recovering patients might gaze as they had their sight restored after cataract operations.

The cornerstone of the Wills Hospital was laid in 1832, and on March 3, 1834, the three-story stone building with accommodations for seventy patients was opened. At first a few lame patients presented themselves, but they were so few that the hospital became famous throughout the medical world as the Wills Eye Hospital.

Ophthalmic Lectures Instituted at Wills

Dr. Isaac Parrish, the brilliant son of Joseph Parrish, was one of the first surgeons at Wills Hospital. He was on its staff from the opening until his death in 1840, and during that time he instituted a series of lectures on ophthalmic topics which were the only ones in the country aside from those given by Dr. Frick in Baltimore. By a strange coincidence the Parrishes, father and son, died on the same hour of the same day stricken by the same disease. The son had contracted it from his father by nursing him. The loss of the two physicians was severely felt by the Wills Hospital, for they were not only outstanding physicians but also men of striking personality who inspired the other members of the staff.

Fortunately, other eminent physicians became associated with the hospital and began building up its long reputation of fame and progress. Among the early surgeons were such names as Littell and Hays. Dr. Squier Littell wrote an excellent "Manual of Diseases of the Eye," and Dr. Isaac Hays was one of the most brilliant pioneers that eye surgery has ever had.

Dr. Hays, a member of the cultured Gratz family, took a leading part in the work of Wills Hospital for years. While he was on its staff, he devised a knife-needle for operating on cataracts which was used successfully for a long time. He was blessed with an original and inventive mind. He was the first ophthalmologist in America and the fifth in the world to prescribe cylindric lenses for glasses to correct astigmatism. His writings on diseases of the eye were excellent, and for his numerous literary labors in the field of medicine he has been called the best medical writer Philadelphia ever produced. Drs. Campbell and Posey write that if Dr. Physick is to be considered the inspiration and guiding spirit of the science of ophthalmology, Dr. Isaac Hays can go down in history as its most brilliant mind.

The Work of John McAllister

John McAllister of Philadelphia ground the cylindric lenses which Dr. Hays prescribed. In the field of optometry, McAllister is one of the most famous names. He was the first to grind lenses to correct myopic astigmatism. He won many medals for his excellent work. In 1874 he received the Franklin Institute award and the Elliott Cresson gold medal for the best scientific instrument of the decade. McAllister's first advertisement read:

> Spectacles, Hardware in General
> also WHIPS and CANES of
> every description made
> and sold by John McAllister.

In spite of the labors of these great physicians the science of the eye was still in a state of sad neglect. In 1851 a great discovery was made which was to the eye what Harvey's discovery of the circulation of the blood was to general medicine. Herman Von Helmholtz, a German philosopher and man of science, was trying to show his class by demonstration the nature of the glow of reflected light sometimes seen in the eyes of a cat. From this demonstration came the invention of the ophthalmoscope, an instrument which explored the interior of the organ of the eye, which had been hitherto inaccessible, and made it possible to study the tissues and structures which had before been invisible. When the great master of ophthalmology, Albert von Graefe, saw the ophthalmoscope, he exclaimed: "Helmholtz has unfolded to us a new world!"

In 1860, ophthalmology first showed signs of becoming a recognized specialty. Great work was being done on the Continent in eye surgery and refraction, notably in Germany, Austria and Holland. To Dr. A. von Graefe of Berlin, said to be the greatest eye surgeon of all time, to Dr.

von Helmholtz and to Dr. Donders belongs the credit for having founded this special science.

Philadelphia eye surgeons went to Europe, studied with the masters and returned to their native city to practice and to give to humanity the benefits of the knowledge they had acquired. The Wills Hospital went on to greater laurels with names of eminent physicians on its staff, names which meant a high ranking in skill as well as in invention of new instruments and in methods of teaching.

Dr. George Cuvier Harlan, whose skill in doing plastic work on the eyelids is well known, Dr. Andrew Douglas Hall, Dr. William Wallace McClure, who invented a special kind of iris scissors, Dr. William Fisher Norris, whose influence was far reaching, and Dr. William Thomson, who was associated with Dr. S. Weir Mitchell in a great work on headaches caused by eyestrain, were a few of the long list of outstanding figures at Wills. Probably no other institution in the country has yet played a greater part in teaching ophthalmology or exercised a greater influence on the development of the science.

In 1923, Stephen Wierzbicki, who had had great experience in the United States Naval Hospitals, became superintendent of the hospital. In the last decade he has been an influence in constantly improving the conditions of the hospital and enlarging its clinics. Dr. George de Schweinitz is consulting surgeon at Wills.

The number of patients attended since 1834 is enormous. More than 800,000 patients, of whom almost 60,000 were house cases, have been treated at Wills. Last year, 800 cataracts were treated by extraction of the lens. Excellent moving pictures of this delicate operation have been taken by a member of the staff. The camera was placed just 4 inches above the patient, so that an extraordinary enlargement of the eye was obtained. These pictures are great aids in instruction and demonstration.

But more wonderful than the moving pictures of cataract operations is the transformation effected in the patient by this operation. Numbers of men and women have been led into the hospital, unable to see anything, and after the removal of the sick lens they have gone forth through its doors able to see the world around them as clearly as the normal person.

Last year, 25,000 clinic cases and 2,413 house patients were treated at the Wills Hospital. These patients came from twenty states aside from Pennsylvania, many from Delaware and New Jersey, some from Maryland and a few from such distant parts as Wisconsin and California. Never in the history of the Wills Hospital has a physician received any monetary reward for his services to the people.

Spectacles Win

Continued from page 699

eighteenth, because of a bad bounce of his ball Markam was the only one not on in three.

"Guess you've shot your bolt," commented Cross. "About time, too, as I've been trailing. However, here's where I'm in the cup for the regulation two putts. Nothing to it. You have a pitch and still two putts coming to equal it!"

"Wait and see," cautioned the physician, defending his young partner. "Take your time, Markam, and pitch up close to the pin."

After studying his approach carefully, Syd rolled his ball up to within a few feet of the hole.

"What do you think of that, Cross?" asked Doc, smiling. "He won't need two putts now."

Cross did not reply but looked serious. Like Markam he was trying to play his best and make a good showing before the coach.

In putting, Coach Peyton and the physician took the regulation two putts. Probably on account of nervousness, Cross failed to lay his putt close to the pin. He still had some distance to go, farther even than Markam. Finally he took three putts to place the ball in the hole. It was now Markam's turn to shoot.

"Up to you, Markam," said the physician. "So far we are all even. Sink your putt and we'll win by one point."

Markam took his stance, lined up the ball and without hesitation sank the long putt by a skilfully executed shot. His single putt had won.

"Fine work," commented Coach as they walked off the green. "Both your pitch to the pin and good putting on that last hole deserved to win."

"I'll say so," interjected Cross, always at heart a good sport. "I've been beating Markam right along this year, but I guess he is getting too good for me."

"You had seven one-putt greens in the game," stated the instructor, looking over the score card. "No wonder you played close to par."

"His spectacles won, I guess," commented Cross as they walked to the club house. "He's been doing better ever since he put them on. If I thought it would help my game I'd get a pair of glasses as big as saucers."

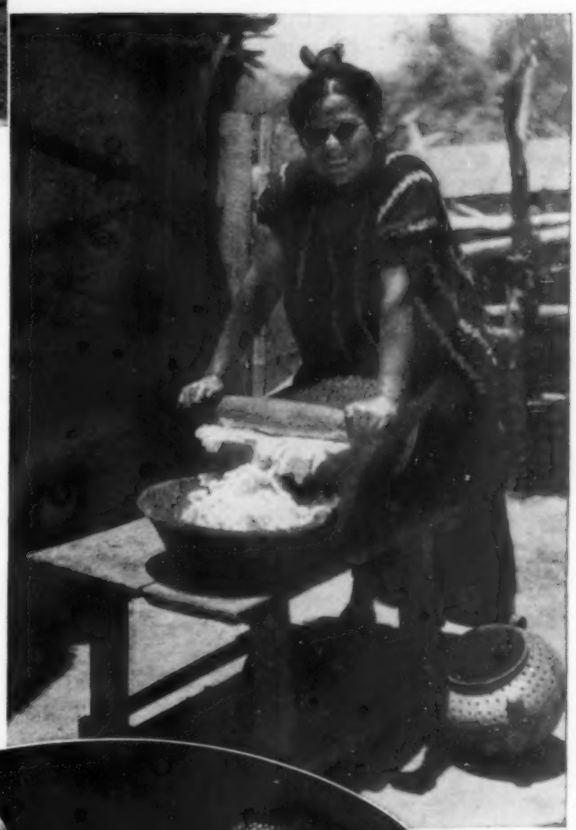
"Says you," added Markam smiling.

"Says I," finished Cross, "and no kidding!"

Bread

AS IT IS MADE AND BAKED IN VARIOUS PARTS OF THE WORLD.

An outdoor bake oven of Corinth, Greece, dating back 3,000 years. Farm women of the state of New Jersey, curiously enough, use ovens like this.



A Zapoteca woman of Chivela, Mexico, grinding corn for tortillas, pictured to the right.

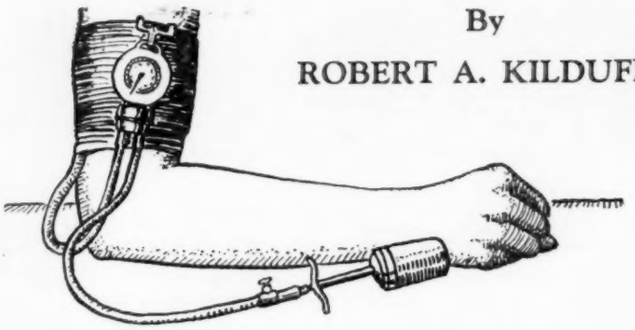
A Hopi Indian woman from Santa Clara Pueblo in New Mexico going to the community oven with dough to be baked, shown below.

Women of a small village in Western Persia, rolling dough and dropping it into a pit to be baked.

Photos by Ewing Galloway

This Business of Blood Pressure

By
ROBERT A. KILDUFFE



The sphygmomanometer measures blood pressure.

SO MANY of those who come to the physician show such an acute interest in their blood pressure that the term has been somewhat facetiously defined as something to worry about after one is 40.

Now if there is anything to worry about in the blood pressure after 40, it is due to lack of interest in it before 40. It is more profitable to understand it than to worry about it, for an understanding of what the blood pressure is and how it "gets that way" enables one to avoid to a great extent those things that may affect it unfavorably.

Blood pressure is most readily defined as the pressure exerted by the blood on the vessel walls. Although this simple definition conveys the essential fact, it does not suggest the rather complicated mechanism involved, without which the efficiency of the circulation cannot be maintained.

The Heart Is the Central Pumping Station

The central station from which the blood receives the initial impulse starting its journey around the body is the heart, a muscular pump. Its action is rhythmic, producing a succession of regular impulses caused by a series of contractions of the heart muscle. With each contraction, called a systole, a volume of blood is driven from the heart chamber. Following each systole there is a period, called a diastole, of rest and relaxation of the heart muscle during which the blood returning from its journey around the body is emptied into the heart.

The blood leaving the heart at each systolic contraction passes into the main arterial channel, the aorta, from which innumerable branches of decreasing size are given off, constituting the "arterial tree" by means of which the blood is distributed to the furthermost parts of the body. The blood returns to the heart by way of a new series of vessels, the veins, which become progressively larger as the heart is neared.

The path thus traveled by the blood is long and tortuous, so much so that even the most powerful contraction of the heart would be unable to furnish the blood stream with sufficient velocity to overcome the inevitable friction between the blood and the vessel wall and to propel the blood to the ends of the body. Particularly would this be true if the blood vessels were rigid pipes, as friction would thus be increased.

Fortunately, however, the blood vessels are composed in part of muscular and elastic tissue and are able to distend and contract, and to play, as a result, an important part in the propulsion of the blood stream.

At each systolic contraction the volume of blood leaving the heart is somewhat larger than the actual capacity of the aorta whose walls, therefore, distend to permit the blood to pass and then contract behind the blood column, thus squeezing it along still further. As the vessels of the arterial tree progressively decrease in size, the disproportion between the size of the vessel and the volume of blood passing through it is maintained so that the mechanism described continues and supplements the systolic impetus of the heart and maintains the flow of blood during diastole, the period at which there is no heart impulse.

In the maintenance of the blood pressure, therefore, several factors are concerned: the force and frequency of the heart action, the elasticity of the vessel walls, the viscosity of the blood itself, and the total quantity of blood in the body, which is roughly estimated as about one-thirteenth to one-fourteenth of the body weight.

It is obvious that the degree of muscular tension and elasticity of the vessels is of marked importance, so much so that a special mechanism devotes a large part of its routine work to the maintenance and regulation of the tonicity of the involuntary muscle forming a part of the arterial walls.

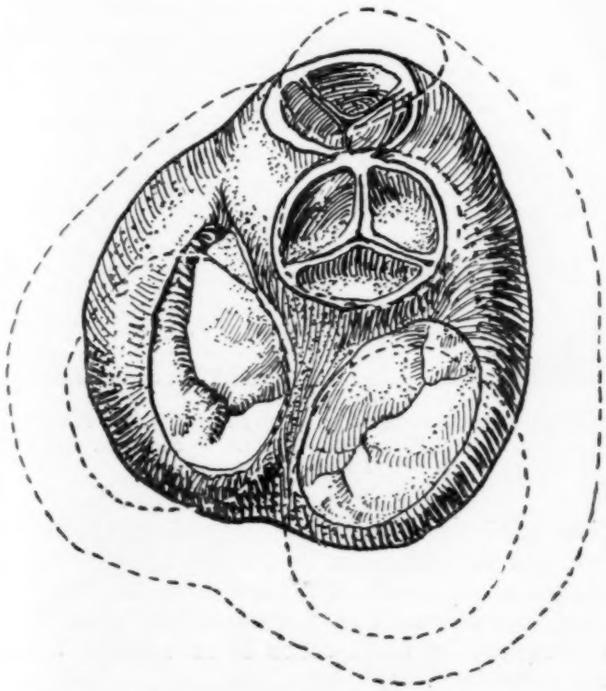
The headquarters of this mechanism are in the suprarenal glands, which are small bodies surmounting the upper pole of each kidney. Because of the fact that their secretion is emptied directly into the bloodstream, these glands are known as ductless glands and the secretion is referred to as an internal secretion.

The suprarenal secretion, epinephrine, is a powerful excitant to contraction of involuntary muscle, and by increasing or decreasing its amount in the blood, the degree and velocity of the blood flow may be regulated throughout the body generally or in any part or organ as necessity demands.

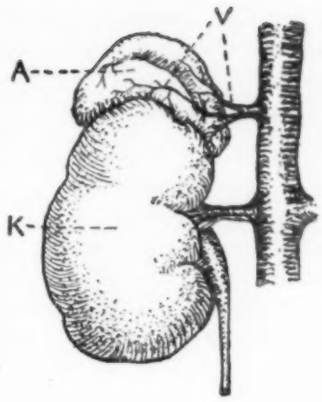
Blood Pressure Indications Are Important

The measurement of the blood pressure therefore enables a variety of inferences to be drawn and is important in a physical examination.

Blood pressure may be quite accurately estimated by an instrument known as a sphygmomanometer by means of which three determinations can be made: the systolic pressure produced by the heart muscle; the diastolic or minimum pressure in the artery, corresponding to the diastolic phase of the heart cycle, and the pulse pressure, or the difference between the systolic and diastolic pressures.



Size of heart and its four valves during contraction; dotted lines represent size during distention.



Front view of right kidney and suprarenal gland. A, suprarenal gland; K, kidney; V, small veins carrying epinephrine directly into large vein.

The sphygmomanometer is of simpler construction than the name implies, consisting of an inflatable rubber sleeve, a pump and either a mercury tube or a dial calibrated in terms of millimeters of mercury.

When the sleeve is placed around the arm at about the level of the heart and inflated with air, the blood vessels in the arm are compressed. As the compression increases, the passage of the blood through the vessels becomes progressively obstructed and may finally be entirely stopped.

As the pressure is being increased, one can listen over the artery below the sleeve with a stethoscope and hear a series of sounds. At first, before the sleeve is inflated, there is nothing to be heard, as the blood flow is unmolested. As the pressure increases, thus squeezing the vessel walls together, a thumping sound is heard which is caused by the impact of the blood column against the walls of the artery. When this sound ceases, it signifies that there is complete apposition of the vessel walls and consequent obstruction of the flow of blood. The degree of pressure necessary to accomplish this is read as the systolic pressure.

The air is now gradually released from the sleeve. As the pressure decreases, the walls of the compressed vessel separate, permitting the blood to pass, and its impact is again heard. The disappearance of this sound indicates that the vessel is no longer constricted and that the blood is again flowing without obstruction. The reading obtained at this point is the diastolic pressure.

Many Factors Influence Normal Pressure

Exactly what constitutes a normal blood pressure cannot be stated within rigid limits for many factors produce variations which are normal. Among these are age, sex, weight, height, posture, exercise, physical development and the altitude at which the readings are made.

The figures in the accompanying table are the average of nearly 20,000 estimations on normal persons and represent the average normal, a slight variation from which does not necessarily constitute an abnormality of any moment.

A simple and fairly accurate working rule is the following: Consider the normal systolic pressure in a man aged 20 to be 120 mm. of mercury, and for every 2 years add 1 mm. To

determine the normal systolic pressure for women of various ages, subtract 10 mm. as determined from this formula.

Average Normal Blood Pressure

Age, Years	Systolic Pressure, Mm. of Mercury
15–20	112
21–25	122
26–30	123
31–35	123
36–40	126
41–45	128
46–50	130
51–55	132
56–60	134

The normal diastolic pressure is approximately from 20 to 40 mm. below the systolic pressure and should be below 100 mm. The average normal pulse pressure is about one fourth of the systolic pressure, or usually about 35 to 40 mm. of mercury.

Excluding the relatively minor variations caused by the factors already mentioned, the two important variations from the normal blood pressure are hypertension (above normal) and hypotension (below the average normal). These in themselves are not nearly as important as their causes, and it is not the pressure but the factors producing it which should arouse the greatest interest.

Reference to the table of average normal values indicates that the blood pressure increases with age. This increase is normal and reflects merely the inevitable effects of age on the tissues, as a result of which the arteries gradually become less and less elastic, producing greater friction between the blood stream and the vessel wall and necessitating, therefore, a greater pressure to insure adequate circulation. Such an increased pressure is normal; it is an anticipated physiologic phenomenon and indicates merely bodily wear and tear, so to speak.

In a general way the causes of abnormal blood pressure may be divided into functional and organic. In the functional group there is no demonstrable change in the bodily mechanism to account for either the hypotension or the hypertension. In the organic group the change in the blood pressure is the result of some physical defect or deficiency.

As a rule, hypertension is more commonly encountered than hypotension. The hypertension of the functional group is a common sequel of the intensity of modern life and is mainly the result of emotional disturbances such as anxiety, worry, fear or excitement, especially when these are continued over any lengthy period.

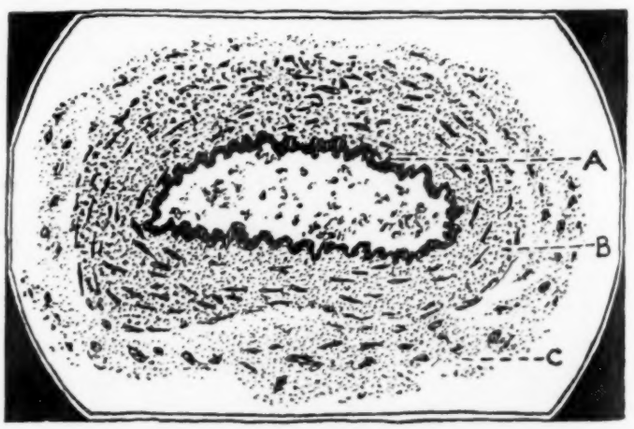
The organic group follows various infections, overweight, chronic poisonings (tobacco and alcohol in excess over long periods) and particularly, as Sir William Osler has said, the habit of living "like keen business men who work hard, play hard, drink hard, smoke hard and eventually have hard arteries."

Hypertension is commonly associated with chronic disease of the kidneys because the kidneys, the heart and the blood vessels may be regarded as forming a functional triangle, a defect in any one leading to functional inefficiency in the others.

For example, a person may have a normal heart and normal blood vessels and develop kidney disease. The retention of waste products thus brought about produces injury to the blood vessels, causing increased rigidity or loss of elasticity. Increased blood pressure then becomes necessary for adequate circulation, which in turn produces overwork on the part of the heart. The eventual disturbance of the circulation affects the blood supply to the kidney, and a vicious circle is thus formed.

An initial heart lesion, on the other hand, interferes with the renal circulation, bringing about kidney inefficiency as a result of which the blood vessels are affected and the circle is again completed. The same path is followed when the pathologic condition begins in the blood vessels.

The causes of hypertension are many and varied and are not always easily discoverable. The intricate mechanism regulating the blood pressure is intimately associated with the reflex nervous system, and it is for this reason that disturbances of the blood pressure may follow long continued mental or nervous strain.



Magnified cross-section of small artery. A, elastic inner layer; B, middle muscular coat; C, loose outer tissue.

As has been said, high blood pressure is not in itself as significant as its causes; in fact, under certain circumstances, hypertension may be definitely beneficial and necessary for continued existence. In such cases it is spoken of as compensatory.

In the individual with hardened arteries, or arteriosclerosis, for example, an effective distribution of the circulation through the hardened

vessels would be impossible unless the blood pressure was increased. The rapid lowering of blood pressure in such a case merely because it was high would be dangerous because it would probably produce syncope and collapse from the sudden anemia of the brain which would follow.

It cannot be allowed to rise, however, to a point at which the brittle vessels cannot stand the strain, because of the danger of rupture of the vessel and hemorrhage, which, when it occurs in the brain, causes an "apoplectic stroke."

The efficient treatment of hypertension means the discovery and treatment of the cause, often better achieved by regulation of diet and habits than by drugs.

High blood pressure is a more familiar subject than low blood pressure for it arises from many causes and is therefore more commonly encountered. Hypotension, however, while less frequent, is of importance. It occurs in marked degree in some chronic diseases and, like hypertension, is seen in certain chronic poisonings. It is frequently found in chronic nervous exhaustion or asthenia and, for reasons which have already been mentioned, is always a pronounced symptom of Addison's disease, or tuberculosis of the suprarenal glands.

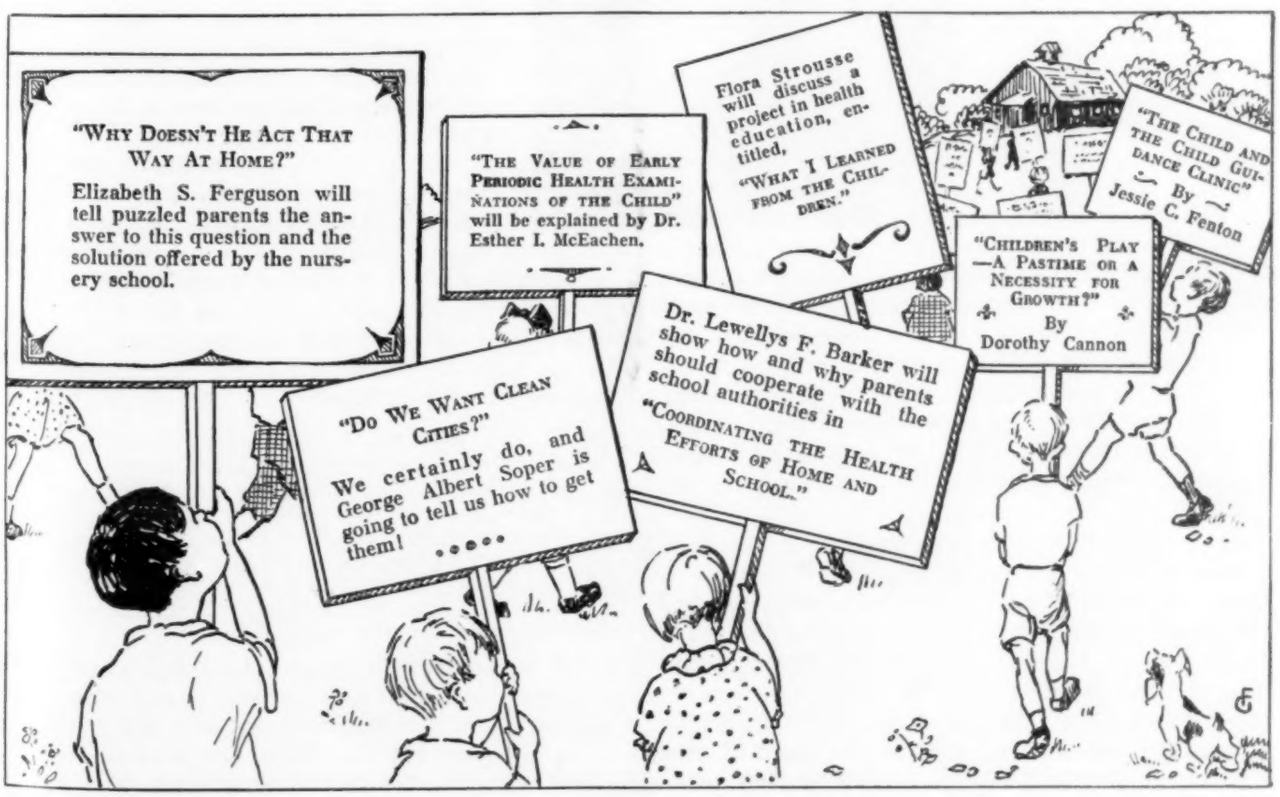
Disturbances of blood pressure, and hypertension in particular, have been called Americanitis because of their relation to physical and mental strain and thus to the high tension existence consequent on the complexities of modern civilization.

Excesses, emotional as well as other varieties, should be avoided, therefore, and life should be lived with the minimum of tension. If temperament or circumstances tend toward a high-speed existence, then there should be equivalent and proportionate periods of relaxation. It should also be remembered that one can play too hard as well as work too hard.

The layman should not be concerned about his blood pressure to the point of permitting it to become an obsession, but neither should he neglect it. High blood pressure is not in itself a disease but a manifestation of disease or of an effort by the body to compensate for disease.

The time to think about high blood pressure is before it occurs, and the surest preventive is to live reasonably. When it does occur, one should first find out why it is abnormal and then arrange one's life accordingly.

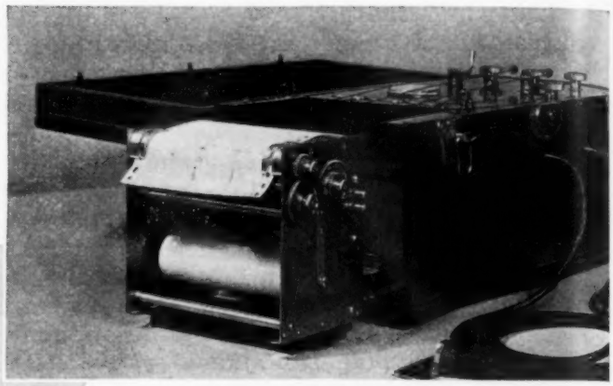
The September Issue of Hygeia Will Be
The School Number
Let the Return to School This Year Be
A Triumphant Health Parade


"WHY DOESN'T HE ACT THAT WAY AT HOME?"
Elizabeth S. Ferguson will tell puzzled parents the answer to this question and the solution offered by the nursery school.
"THE VALUE OF EARLY PERIODIC HEALTH EXAMINATIONS OF THE CHILD" will be explained by Dr. Esther I. McEachen.
Flora Strousse will discuss a project in health education, entitled, "WHAT I LEARNED FROM THE CHILDREN."
"THE CHILD AND THE CHILD GUIDANCE CLINIC" By Jessie C. Fenton
"CHILDREN'S PLAY —A PASTIME OR A NECESSITY FOR GROWTH?" By Dorothy Cannon
"DO WE WANT CLEAN CITIES?" We certainly do, and George Albert Soper is going to tell us how to get them!
Dr. Lewellys F. Barker will show how and why parents should cooperate with the school authorities in "COORDINATING THE HEALTH EFFORTS OF HOME AND SCHOOL."

How Science Solves Crime

VII. The Polygraph

By LEONARDE KEELER



Acting as a lie detector, the polygraph gives a reliable record of the emotions.

HUMAN EMOTIONS are rife with interest for every human being. Love takes its undisputed place in the center of the stage, the less glorified emotions adding sparkling variety and contrast. Through association with these gaudy accompaniments of human life—the emotions—blood pressure and other measurable bodily reactions have become subjects of popular interest.

In recent years such physiologists as Cannon, Sherrington, Crile and others have discovered many of the physical manifestations of emotion, noting the effects produced on the organism by pain, anger or fear. They have demonstrated that accompanying these emotions there are certain impulses which are transmitted over the autonomic nervous system to the smooth muscles of the stomach, intestines and small arteries, which respond by contracting or relaxing; the impulses are also transmitted to various ductless glands which respond by secreting more or less of their products into the blood stream, and these glandular products, in turn, cause other changes within the system.

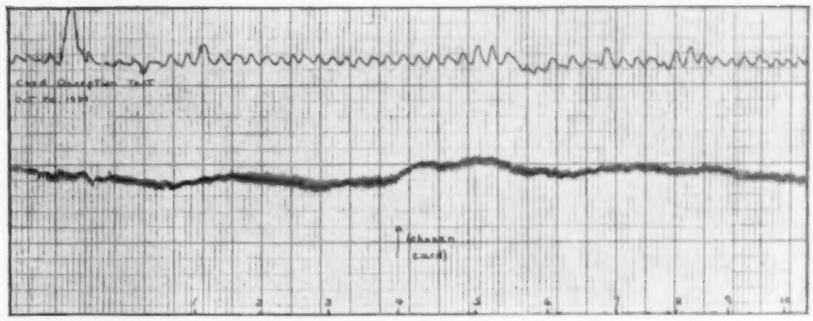
Some bodily changes can be detected and studied more easily than others and, although intermediate changes may be difficult to observe, many of the end-reactions may be recorded with ease. Of course, in studying various bodily responses it is difficult, and sometimes disconcerting to the subject, to have the experimenter tap the nerves or dip out samples of blood for analysis at frequent intervals; but variations in blood pressure, pulse frequency, respiration, pupillary area and secretions of some ducted glands can be observed with little discomfort to the subject.

It is interesting that Benvenuto Cellini records in his autobiography the following observation concerning his father:

> I was ill about two months, during which time my father had me most kindly treated and cured, always repeating that it seemed to him a thousand years till I got well again, in order that he might hear me play a little. But when he talked to me of music with his fingers on my pulse, seeing he had some acquaintance with medicine and Latin learning, he felt it change so much if he approached that topic, that he was often dismayed and left my side in tears.

In more recent years, psychologists have observed through laboratory experiment that various bodily changes accompany the emotions evoked by deception. However, it remained for Chief August Vollmer, America's pioneer in

police science, to salvage from academic burial the idea of using blood pressure in practical police work. In 1921, he assigned to one of his men, John Larson, a student at the University of California, the task of building a machine that would show in a continuous line the pulse and respiratory changes resulting from deception.



When the chosen card is exposed, the blood pressure rises.

Larson began with a modification of the Erlanger sphygmograph and obtained a continuous record showing certain changes of blood pressure and the pulse beat. Concurrently, an ordinary pneumograph system showed changes in respiration.

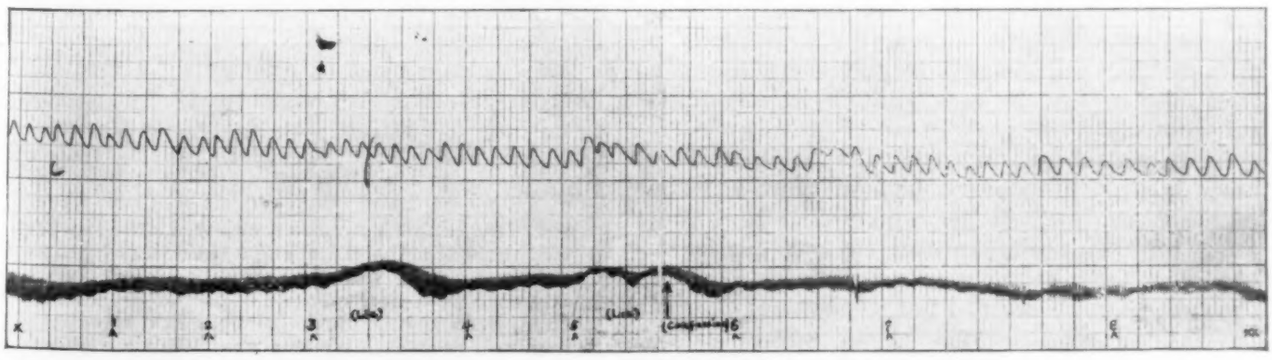
As Vollmer recounts, an old touring car, well laden with coils, smoked drums and other appurtenances, and a hardy youth with the burning eyes of a discoverer were forthwith fleeing over the California highways, plaguing suspects, annexing themselves to gamblers, swindlers, thieves, burglars, murderers, to the lame, the halt and the blind and to the insane and feebleminded. Within two years, Larson had examined some 400 criminal suspects with such success in detecting deceivers that Chief Vollmer listed the sphygmograph as potentially one of the most valuable aids to the criminal investigator. Since that time, his support and encouragement of those conducting researches in this field have been unwavering and his vision and enthusiasm unlimited.

In 1924, Chief Vollmer was called to Los Angeles in the capacity of chief of police for an intensive year of "cleaning up." I had served an apprenticeship with Larson and was invited by Chief Vollmer to examine criminal suspects. As a result of these activities, a new instrument was developed.

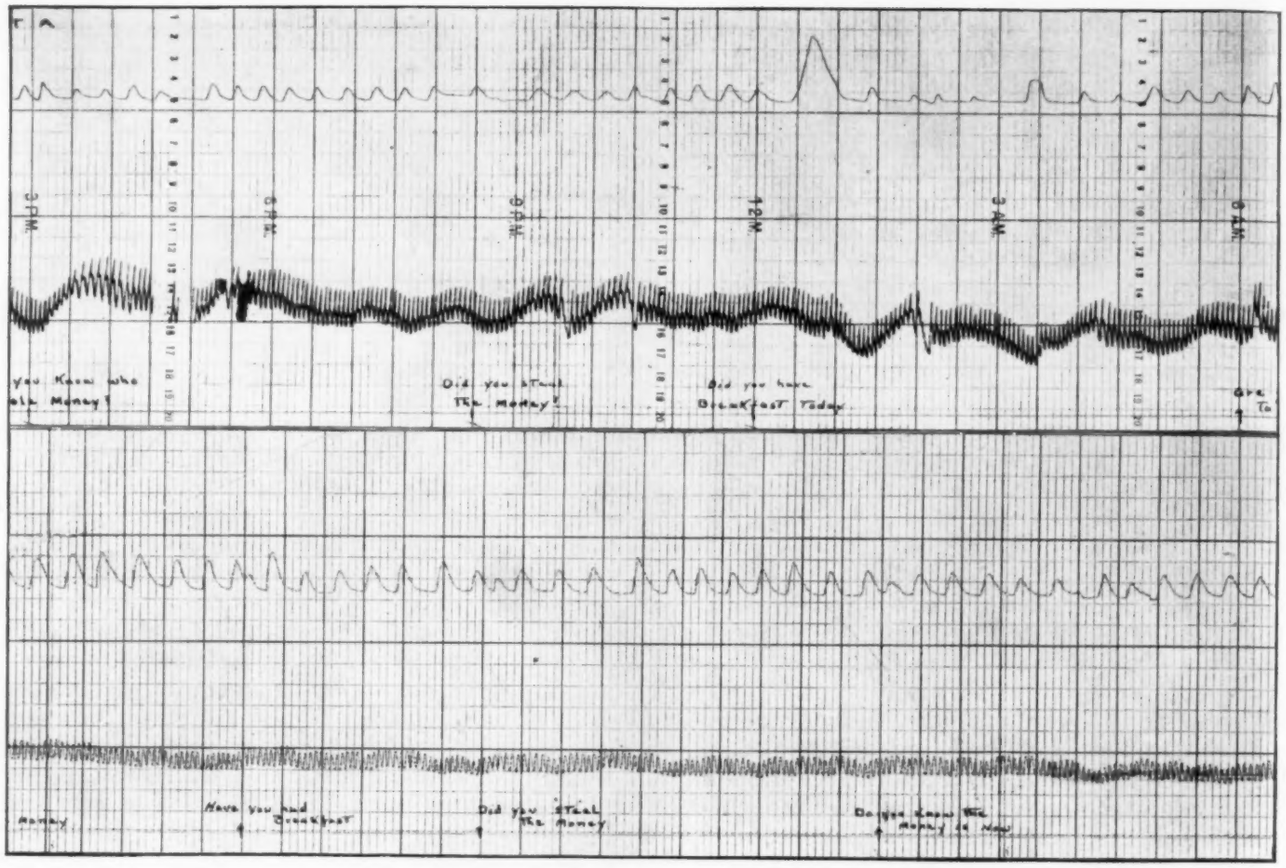
From the Los Angeles studies evolved the finding that greater blood pressure fluctuations occurred in suspects than were recorded on available apparatus. Much of the change was lost in the elasticity of rubber diaphragms that had been used in the pulse recording system. Consequently, while I was working under Dr. Walter Miles at Stanford University, I devised an instrument replacing the rubber pressure reducer and tambours with metal tambours thus making possible a quantitative blood pressure curve coincidental and in combination with the pulse beat curve.

At this time an experimental laboratory situation was created in order to determine approximately how slight the detectable degree of deception might be. In this situation the emotion associated with deception arises only from a desire to "beat the test." Ten playing cards are presented to the subject, who chooses one and notes down its number and suit. Cards are shuffled and, according to previous instruction, the subject looks at each card and says "no" as they are held, one by one, before his eyes, in answer to the query, "Is this the card you chose?" Thus he lies when responding to his chosen card. The accompanying emotional stress may be assumed to be slight. Seventy-five subjects, however, were thus tested at Stanford, only four giving undetectable deception responses.

The usual curve obtained in this experiment shows a slowly increasing blood pressure. As each card is exposed there ensues a slightly greater increase in the pressure, which rapidly drops back to the general curve. When the chosen card is exposed, the pressure rises as in the previous responses, sometimes to the same degree and sometimes higher. The following cards do not give rise to any changes in pressure, while the general curve gradually descends.



A relief relaxation is apparent both in blood pressure and in respiration after a confession.



One subject made both these records; the upper is the "lie" record, and the lower is the record made when the same questions were answered truthfully.

The respiratory curve shows normal or slightly suppressed breathing up to exposure of the chosen card. Immediately following this, the breathing is usually suppressed still more, but subsequent to exposure of the next card, the respiratory curve shows increased inspiration and expiration, probably caused by the oxygen debit incurred during the previous part of the test.

The apparent anticipatory tension preceding the significant question, the rise in blood pressure and the suppression of breathing as an immediate response to the significant question, and finally the "relief" relaxation apparent both in blood pressure and in respiration are the fundamental patterns of reaction recorded by the instrument and appear in one form or another in the records of guilty criminals as well as in those of "guilty" experimental subjects.

In an actual criminal case the polygraph test resembles a laboratory test in that environmental factors must be controlled. It is most important that all exciting factors are eliminated, so that the responses will be due only to the case in question and not to physical or other psychologic disturbances. Fear dominates the guilty suspect, for if he is found guilty he may lose reputation, liberty, money or life. Even the innocent man, accused of a criminal act, will suffer considerable apprehension, perhaps fearing conviction, social stigma or mistreatment. He may also be angered by the accusation. Other emotions will play but an insignificant rôle.

Response either to fear or to anger produces, in most cases, an increase in systolic and diastolic blood pressure; therefore the examination procedure must be formulated with full consideration of all possible factors involving emotional disturbance. The best results are obtained when the operator works on the theory that the subject is innocent and attempts to obtain as regular a curve as possible. The guilty side of the situation will be well handled by the suspect himself.

The technic used in examining a suspect, as demonstrated in "A Method for Detecting Deception," an article in the *American Journal of Police Science,* is described in the following summary:

> After the case has been reviewed, the suspect is turned over to the laboratory examiners; those in whose custody he has been are dismissed, and he is surrounded by a new environment and personnel. He is then briefly interviewed: "I can't see that they have much of a case against you. Tell me about this job you're supposed to have pulled." He is urged to tell his story and on completion is asked to submit to

a test in which his blood pressure and respiration will be recorded. "If you're innocent of this charge, I'm sure we can determine as much in a few minutes. O. K.?"

Only 6 out of some 8,000 suspects have refused to submit to the test. An innocent man has nothing to fear and is glad to prove his innocence in any way. A guilty man fears that a refusal to submit might indicate his guilt.

The subject is seated comfortably with his back to the apparatus, the arm cuff bound about the upper arm or leg, the pneumograph tube tied about the chest or abdomen (according to the type of breathing) and the cuff system inflated to about halfway between the systolic and diastolic pressure (the point, as ascertained on the machine, at which the maximum amplitude of pulse beat is obtained). This level of pressure is maintained throughout the test. Any changes in the individual pulse or blood pressure will change the pressure of the system, thereby deflecting the needle accordingly. The pressure may, at the outset, cause a little discomfort, but few complain and, on instruction, most subjects will refrain from moving.

The test runs for two or three minutes of silence to ascertain the subject's normal fluctuations, heart condition and respiration. He is then told: "This machine has been used for some years on criminal suspects and has proved a reliable means of determining innocence or guilt; I'm sure it will not fail in your case. Now sit as quietly as possible and answer questions with just 'yes' or 'no.' If you have any explanations to make, reserve them until the completion of the test."

During this preamble an innocent person usually relaxes and settles down to the honest answering of questions. The guilty suspect becomes more tense, however, as indicated by a general increase in blood pressure and, superimposed, many rapid fluctuations.

After the "normal" is obtained, two or three irrelevant questions are asked so that the reaction in answering may be recorded. Direct questions pertaining to the crime are then asked, such as "Did you dine with Jones Tuesday night?" "Did you owe Jones money?" and "Did you shoot Jones?" These questions are asked in a quiet monotonous voice. Time is allowed between questions for bodily responses to occur. Occasionally, irrelevant questions are interposed among the relevant ones, such as "Do you live in Chicago?" or "Have you had lunch today?"

During this interrogation the innocent person may respond slightly, especially to the first few questions, but these responses do not indicate great emotional stress. The general blood pressure curve drops, and the superimposed fluctuations become fewer and less intense. The guilty individual becomes more disturbed as the test progresses, the general blood pressure curve rising and rapid fluctuations increasing in intensity and frequency. The blood pressure response to each lie causes an increase in both systolic and diastolic pressure of from 4 to 10 mm. of mercury. (Usually the diastolic pressure increases considerably more than the systolic.) During a test lasting ten minutes, the general pressure may rise from 8 to 20 mm. of mercury, depending on the individual.

The respiration of the guilty person becomes more rapid and, in most cases, he attempts to control his responses at periods immediately following deception, tending to shorten both inspiration and expiration and to breathe more slowly. In consequence there is a period of oxygen debit and, on the following irrelevant question, the breathing becomes deeper and more rapid than the preceding normal. The innocent suspect is not prompted to control his emotional responses, and his respiratory curve becomes more regular as the test progresses.

If the polygram is indicative of guilt, the suspect is questioned further with a slightly different procedure. He is shown his initial record, which is carefully explained, and is asked to account for certain responses indicative of emotional stress. The more he tries to explain, the more confused and entangled he becomes.

Knowing that the machine has recorded his lies, the guilty man is examined by a second test. By this time he has become extremely apprehensive that, if he is unable to control his responses, during the second test he will surely be proved guilty. His increased fear of the tell-tale needles and his consequent redoubled efforts to control them, result in a record far more tortuous than the first.

On completion of subsequent tests, about 75 per cent of the guilty suspects confess. The only "torture" involved in such a test is self induced through fear of being caught, and that fear exists whether the man is being cross-examined in the usual way or on a blood pressure apparatus.

In the last two years, Illinois and nearby states have provided a wealth of material for deception tests with the polygraph—a total of more than 2,000 suspects having been examined in that time. In 1929, at Joliet penitentiary, I examined 500 convicts in a study made with Dr. Herman Adler, state criminologist. Skepticism suggested that the so-called hardening due to a long criminal career might not be so extensive as is commonly supposed. Actually it was found that convicts' blood pressure and respiration changes during deception were not, by any measurements, inferior in extent to those of an ordinary virtuous citizen. Even two old-time "poker face" card sharks were readily detected in the experimental card deception test, their chosen card being determined from the records of their bodily responses.

Since the summer of 1930, through the Northwestern University Scientific Crime Detection Laboratory, polygraph examinations have led to confessions and clues to evidence in all sorts of thefts, varying from petty purloining of university groups to burglaries, robberies and bank embezzlement, and, in other crimes, from malingering for insurance collection and anonymous letter writing to sex offenses and murders.

Much of the satisfaction derived from this work naturally comes from the clearing of innocent suspects. Especially gratifying in this respect was a case in which two collection agents dropped into Black Creek, Wis., one day last year and, before the day had passed, were arrested on a charge of bank robbery. Both of the men had visited the bank on business early in the day and were positively identified as the robbers by four employees of the bank. The defending lawyer, in order to convince himself of their innocence, asked to have them examined on the "lie detector."

Both men readily submitted and gave clear curves. One of the suspects gave a surprisingly significant response to the question, "Did you graduate from college?" It was discovered that he had graduated but had entered from high school with false credentials. His response in this mild deceit of years gone by was much

greater than to questions concerning the robbery. A report to the effect that the men were innocent was supplemented by a demonstration before the judge, but he saw fit to rule that the evidence was inadmissible since it would, if admitted, usurp the right of the jury.

The trial proceeded with little to combat adverse circumstantial evidence. On the third day, two robbers who confessed to the Black Creek robbery were caught in Minneapolis. When they were brought before the four bank employees who had identified the accused collection agents, the two Minneapolis gunmen were also positively and unhesitatingly identified. Fortunately, indisputable evidence was also found against the latter.

In another instance the officials of one of the Chicago banks discovered a loss of $50,000 from one of the tellers' cages. A number of employees had been questioned at length, but investigation had not yielded any helpful information. About two weeks later the bank employees, fifty in all, were examined on the polygraph. Twelve polygrams indicated undue stress and inhibitions at specific questions pertaining to stealing. After subsequent tests, responses of nine of the twelve indicated truthfulness after the men had admitted the embezzlement of comparatively minor sums from the bank. Curves indicating deception persisted, however, in spite of the attempts of the other three to clear their records by minor admissions. All twelve were finally dismissed from the bank.

Further substantiating evidence for polygraph findings does not always come to light, although whenever there has been subsequent evidence it has borne out the findings of the polygram.

In a recent case a safe in a ticket office at one of the railroad depots had been burglarized of more than $700 in currency. The ticket agent had locked the money in the safe and closed the office for the night. In the early morning the assistant agent opened the office; he did not find anything disturbed until he unlocked the safe and missed the currency. The two men were brought to the laboratory, and polygraph curves of each indicated innocence.

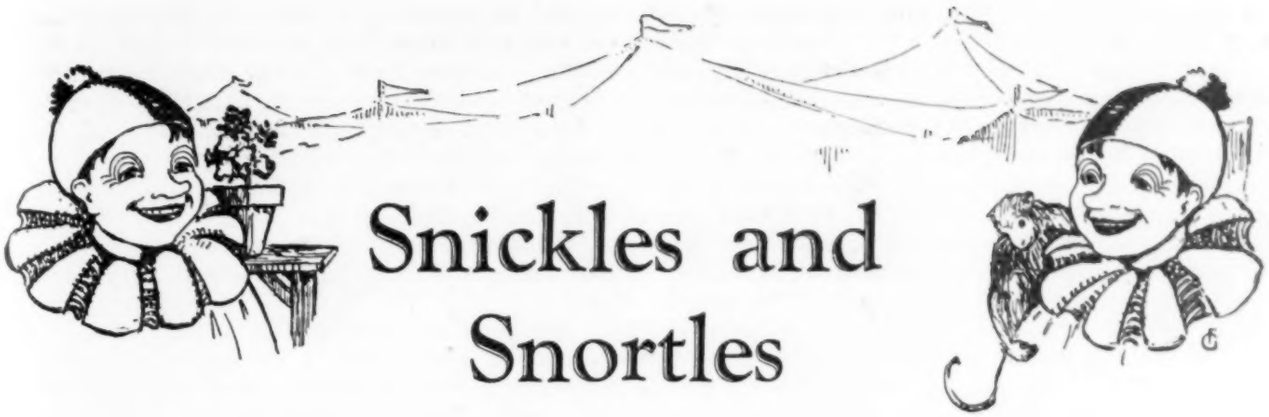
The investigators were puzzled, as it seemed that at least one of the men must be guilty since no other employees had keys to either the office or the safe. Some days later, however, the chief special agent brought in two men who had been employed during the previous summer. The polygraph curves of one indicated innocence, but the other gave specifically guilty responses.

Shortly after leaving the laboratory he was promised immunity by the railroad officials and immediately confessed the burglary. He had had duplicate keys made while he was employed at the station. Several hundred dollars was found on his person, and he led the agent to his backyard where the balance was found buried in a can. After hearing the young man's story, the railroad officials presented him with a pass to his university town and wished him success in his work there.

Although the practical polygraph deception test has been used successfully for the past ten years on thousands of criminal suspects and others, a great deal of research remains to be done. New improvements are being developed in the apparatus, new indicators are being added and, month by month, the technic becomes more reliable. Some day, some form of deception technic based on the recording of bodily changes will probably be used by many law-enforcing agencies, as are the fingerprint and radio systems, which have already become standard adjuncts to police departments.

Dynamite + Cotton Twine + a Microscope = ?

In the September HYGEIA, *Col. Calvin Goddard, who has contributed several articles to the scientific crime detection series, will tell how Dr. Albert Schneider found the solution to this problem to be: "A farm through which runs a swift stream and upon which will be found pine trees, several varieties of shrubs [specifically mentioned], black and white rabbits, a bay horse, a light cream cow, and Rhode Island chickens."*



Snickles and Snortles

the Circus Twins

Chapter V

By NELLIE G. HERRIMAN

PEE WEE, the dwarf, crept along in the shadow of the tent, pausing often to listen. He slipped past the lions' cages and lay in the darkness beside the hippopotamus' tank, watching to see if any one was moving about on the circus lot. There was no one in sight, and no sound could be heard except the stirring of the animals in their sleep. The dwarf left the shadow of the big tank and darted through the moonlight toward the long row of tents in which the circus folk were sleeping.

Quietly as a mouse he flitted past these tents, most of which were dark and silent; for the circus people, who are careful to have many hours of sleep, had put out their lights long ago. He listened carefully before passing the largest tent, for here the manager slept "with one ear open," as he said. Pee Wee feared that the manager would hear him, but a deep snore from inside the tent told him that he was safe as yet.

At last the dwarf paused outside a small tent and lifted the flap that served as a door.

"Pst!" he whispered. "Snickles! Snortles!"

All was quiet, and he called in a low voice, "Hey, boys!"

There was a stir in the tent.

"What's the matter? Who is it?" piped up a startled but somewhat sleepy voice.

"Don't be scared; it's only Pee Wee," whispered the moonlight visitor softly. "I'm out for an adventure; do you want to go along?"

"I don't know," said the voice doubtfully. "It's awfully late, isn't it?"

"I suppose it is, for sissies and babies," said the dwarf scornfully. "It is just the right time for fellows that aren't fraidy-cats."

"I'm not a fraidy-cat," said the voice.

"Come along then," Pee Wee urged. "Which one of the twins are you?"

"I'm Snortles; Snickles is sound asleep."

"Wake him up."

"No! He is badly in need of sleep. You know he made a mistake yesterday because he stayed up the night before, and our mother almost had an awful fall. Clowns have to be mighty careful about losing sleep," said Snortles seriously.

"Well, leave him here, then, and you come with me," Pee Wee coaxed.

"No, I'd better not. Some other time, perhaps." Snortles snuggled down beneath the blanket. He put his head out again and said, "Mother wouldn't like it."

"Oh ho! Mother's pet—mama's baby boy!" chanted Pee Wee softly and scornfully. "He doesn't dare go unless his mama gives him permission. Sweet little fellow!"

"I do too dare!" Snortles sat up in bed again. "Why don't you come along, then?"

"I—I just don't want to."

"Then you're a fraidy-cat!"

"I'm not! I'll show you I'm not!" Snortles slipped from his bed and began to pull on his clothes in the dark.

Soon he joined Pee Wee outside the tent. It was a beautiful moonlit night, and the circus lot was bathed in silvery, misty light.

"Why, I didn't know it was so pretty at night!" said Snortles.

"Sure, it's pretty," said Pee Wee softly. "I often come out at night just to look around." If Snortles had looked closely at Pee Wee, he would have seen that the dwarf's eyes were shining in mischief and that he was hiding some guilty secret. Pee Wee loved to be in trouble, but he loved even more to get some one else into trouble. Tonight he could hardly wait until they were a safe distance from the tents before he began to talk softly into his companion's ear.

"It's a great time to be out," he said. "I never saw the stars so bright or the moon

so big. Let us go out into the country for our adventures."

"But it is so far," objected Snortles. "I really must not stay out too long, for if I'm tired I cannot do my part in the performance. Being a clown is heaps of fun, but it is hard work, too. No, I must not go for a long walk tonight; perhaps some afternoon I can go with you."

"Will you go if we ride?" asked Pee Wee. "Then we should be back in a short time."

"Well, perhaps," Snortles answered slowly. "But we have nothing to ride."

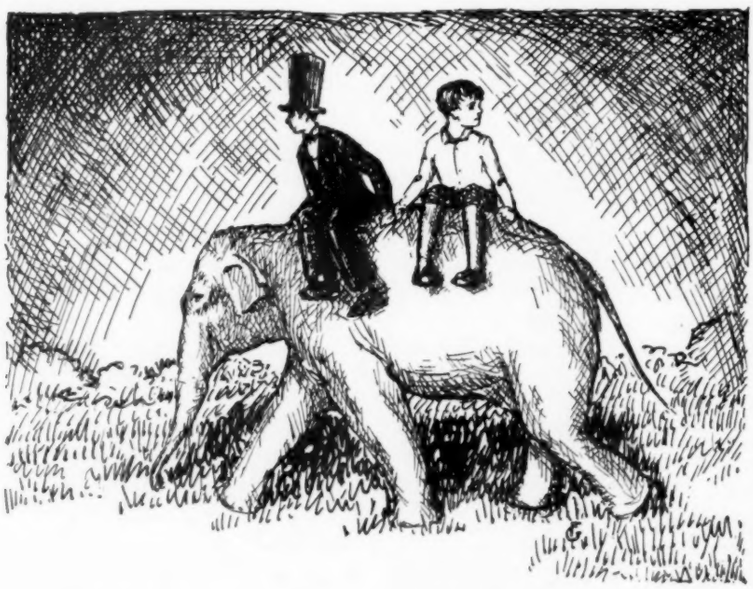
"Oh yes, we have!"

"What?"

"You'd never guess!" The dwarf's eyes were shining with fun and mischief.

"Tell me," Snortles insisted.

Pee Wee took him by the arm and led him toward the elephant tent. Cautiously he raised the flap at the entrance and crawled into the tent, pulling Snortles behind him. The elephants were standing quietly; the tent was still and dark. Occasionally a chain rattled or a bit of hay rustled, but these sounds did not last for long.



Pee Wee and Snortles rode on Little Jumbo's broad back.

"What are you going to do?" inquired Snortles fearfully.

"I'm going to get us a prancing steed to ride," whispered Pee Wee. "You must help me; come along."

"What are you going to do?" Snortles asked again.

The dwarf did not answer. Softly he led the little clown through the darkness, pausing frequently to listen. Soft trumpeting told them that the elephants had heard them but were not frightened at the midnight visit.

Soon the boys brushed against the canvas wall, and Pee Wee rubbed his hand about on it. At last he pulled back the large flap at the back of the tent, allowing the moonlight to flood across the long line of huge gray figures. The elephants shifted uneasily, lifted up their long trunks and trumpeted again, but Old Susie scolded them mildly and they became quiet.

"You hold back this flap," said Pee Wee. "I'll do the rest."

"I'm afraid we're doing wrong," said Snortles miserably. "I believe I had better go back to bed."

"Ho ho ho!" jeered Pee Wee. "What can be wrong about this? We'll just take Little Jumbo out for a few minutes and then bring him back. He'll be better for the fresh air, and it can't possibly do any harm."

"All right," said Snortles, "but hurry."

Little Jumbo was picketed at the end of the line. He was young and not nearly as large as the other elephants, but he was used to being led about with children on his back, for the little visitors at the circus often put bright dimes into a little box for the privilege of riding on his broad back. He now put out his trunk toward Pee Wee, for he loved all little people.

Snortles heard the rattle of chains as Pee Wee freed Little Jumbo from his stake. Soon he saw the baby elephant coming toward him in the moonlight, with the dwarf running beside him.

"This is something like!" exclaimed the dwarf, leading Little Jumbo to the fence. By climbing to the top rail he was able to slip onto the rough gray back of the little elephant, and Snortles climbed up behind him. With a long stick the dwarf prodded their steed, and they started off across the circus lot. They found that Little Jumbo could be easily guided by a light touch of the stick on his ear. He went rapidly and smoothly through the moonlight, seeming to enjoy the night as much as did his passengers. His gliding run carried them swiftly away from the circus lot, through a dark alley, and so out of town.

"There is a farmhouse across the field," said Pee Wee. "Let us visit it first of all." A gate led into a meadow, and they went through the clover, leaving a dark path in the shining dew.

Snortles thought he had never enjoyed a ride so much, and the dwarf was humming a little tune just above his breath. They forgot that they had ever been sleepy, and Snortles almost forgot that he was in mischief.

The farmhouse and barns lay on a hill beyond the meadow, and they soon came into the yard that surrounded it.

"What shall we do here?" Snortles asked, gazing at the dark windows.

A branch hit his face; something squawked.

"I'll stay with Little Jumbo while you investigate," said Pee Wee.

"There might be apples in that orchard over there. If you fill your pockets there will be enough for us both."

"Wouldn't that be stealing?"

"Not at all, if you take the ones on the ground," said Pee Wee.

"I'm not sure you are right," said Snortles.

"They'll never miss them," said Pee Wee, as if that settled everything. "Go on, there's nothing to be afraid of."

"I'm not afraid," answered Snortles, and he slipped from the elephant's back and started toward the clump of trees beyond the barn. Feeling quite uneasy, he climbed a little fence and stood still in the moonlight. A delightful fragrance filled the air. Yum, yum! Apples!

He could see shining fruit in the branches overhead; how good the apples looked, even in the moonlight! But those on the tree were not for him, he thought, and kicked about on the ground, hoping to find some in the long grass. There was nothing under the first tree, and he went on deeper into the orchard. As he went through the shadows, a low-hanging branch brushed his face, and something squawked suddenly, before his very nose. He ran back in alarm, bumped another limb and started such an uproar as he had never heard. Flapping wings flicked his face, and deep voices rattled at him.

"Gobble, gobble, gobble!" they said. Gobble, gobble, gobble!"

Turkeys! He had heard that they made this terrible racket, although he had never seen one except on a huge platter or hanging head down in a shop window. He had never dreamed they were such ferocious creatures. He thought his knees would be heard by the people in the house, they were knocking together so badly. He was sure they could be heard even above the turkeys' clamor. At last he found strength and started to run.

Something was following! There was a rush, a flapping and a loud "Gobble, gobble, gobble." He fell in the long grass and scrambled to his feet. The turkey gobbler was close behind when he started to run again. He tumbled over the little fence, and a loud ripping told him that part of his blouse stayed behind on a wire.

Pee Wee knew something was wrong, and he poked Little Jumbo with the stick and guided him to the fence. Snortles climbed the fence again and scrambled up behind the dwarf, and they started off just as the gobbler flew across the wires. He flapped at the round feet of the little elephant, and Jumbo ran for dear life, with the two boys clinging desperately to his back. Lights flashed on in the house, and startled voices added to the excitement.

Jumbo's swift feet soon left the turkey far behind, but his fright still carried him forward as fast as he could go. Down the hill he loped, choosing his own way, for Pee Wee had lost the stick. He struck out across another meadow, where rolling hills led him up and down. A little brook whispered to itself in a valley, and Little Jumbo plunged down the bank. The two boys lost their balance and slipped down his flat side, making quite a splash as they struck the water below. It was quite deep, and they came up dripping. They floundered about, trying to get to the bank. How they wished they had learned to swim!

Little Jumbo knew that he had lost his riders, and he felt most lonely and afraid without them. The noisy thing at his heels had been left behind, so he turned and went back toward the brook. He waved his little trunk over the boys, and they grasped at it and pulled themselves from the water. Shivering and dripping, they huddled together for comfort and warmth.

"A-chew!" sneezed Snortles.

"A-chew!" sneezed Pee Wee.

"Ah-ooong-a" trumpeted Little Jumbo.

"What shall we do?" chattered Pee Wee. "We cannot get on his back from the ground."

"We'll each hold one of his ears and lead him until we find a fence or a stump," said Snortles. "I'm beginning to believe that our adventure has been a failure." He sneezed again and Pee Wee did the same.

It seemed that they walked a long way before they came to a fence, with a road on the other

side. Even then they followed the fence a long way before they found a gate leading into the road. When at last they started down the road they were weary and almost frozen.

They rode and rode and rode. They had lost their direction, but they followed the road, hoping it would lead them back to town. Little Jumbo lagged as if he, too, were tired.

"There are some trees," said Pee Wee. "I declare, it looks like another orchard."

"That means nothing to me," said Snortles.

"It means food to me," said Pee Wee. "Some nice ripe apples would taste pretty fine just now."

"Well, I won't—A-chew!—go into another orchard at night as long as I live," said Snortles.

"You stay with Jumbo, then, and I'll go." The dwarf slipped down and went cautiously into the shadows of the orchard. Soon he returned with his pockets bulging.

"I found a lot of big apples," he said. "Want one?"

"No, I've decided that it isn't right to steal other people's fruit, and so I'll not eat any, thank you."

Pee Wee was chewing industriously, but he stopped and stared at his companion thoughtfully. At last he spat the apple from his mouth.

"They're green and awfully sour, anyhow," he said. He removed the apples from his pockets and placed them in a little heap beside the road.

Little Jumbo's trunk reached out toward the apples, and he sniffed. The trunk picked up an apple and carried it to Jumbo's mouth.

"We'd better not let him eat them," said Snortles.

"Elephants are tough. They won't hurt him."

"But they are not our apples. They belong to somebody else."

"Well, it's too late now, for he has eaten them all," answered the dwarf. "Give me a hand up."

They started down the road again, wishing they were home in their warm beds. Up hill and down hill they went, but still there were no signs of the town.

"Oh dear," sobbed Snortles. "Why did we ever come!"

"There's something the matter with Little Jumbo!" shouted Pee Wee. "Get off, quick!"

They slid from his back, and he lay down, groaning. He rolled over and groaned again, putting out his trunk toward the boys as if begging for comfort. "Ah-oong-a," he crooned most pathetically.

"It must be the green apples," said Snortles. "What shall we do?"

"Perhaps he will feel better after a few moments," said Pee Wee hopefully.

But Little Jumbo did not get better. He continued to bellow, and he rolled as if in great misery. The boys patted him and rubbed his sides, but of course this did not help much.

"We shall have to go for help; there is sure to be a house on this road somewhere," said Snortles. "Listen!"

Grasping Jumbo's trunk, they pulled themselves up.

"What did you hear?" asked the dwarf fearfully.

"Voices! And Little Jumbo hears them too!"

Surely enough, the little elephant had raised his head and was trumpeting joyfully.

"Snortles! Pee Wee!" called a voice from beyond the hill.

"Here we are!" screamed the boys.

A crowd of men appeared on the hilltop. When they saw the little group beside the road, they started to run.

"What's wrong?" cried one as he came up. It was the elephant trainer.

"Little Jumbo is sick. He ate some green apples," said Snortles, almost ready to cry.

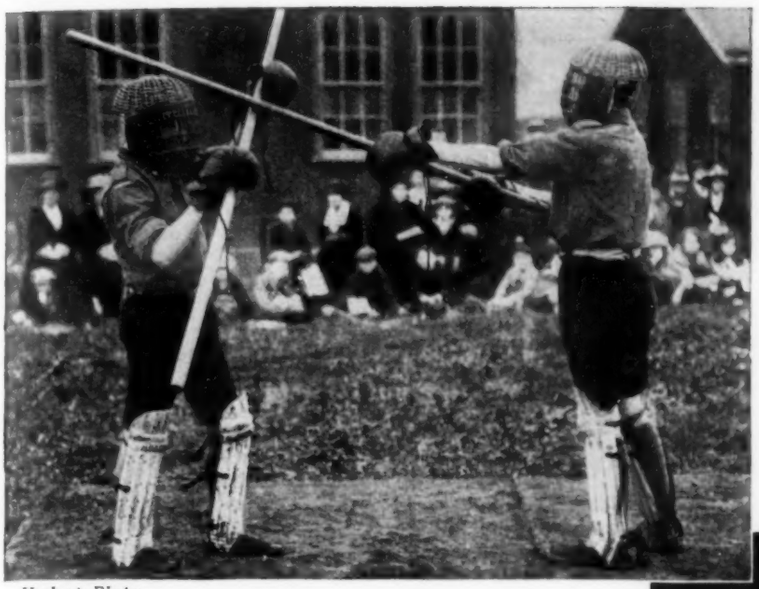
The man knelt beside the elephant. "A bad case of colic," he said when the others arrived. Many of the performers, and even Mose, the Negro cook, were in the crowd. It did not take long for them to explain that the trainer had been awakened by the scolding of Old Susie, who must have become nervous when Little Jumbo failed to return. They had discovered the absence of the little elephant and the boys, and had immediately organized a searching party. The dark path through the bright dew had helped them a great deal.

"Some of you men stay and take care of the elephant," said the performer. "The rest of us will take these boys back to town. Snortles' mother is almost ill with worry. I hope this will teach you not to do things of which your mother would not approve."

"Oh, it will," said Snortles. "It has taught me a number of things. A-chew!"

"A-chew!" sneezed Pee Wee.

(To be concluded)

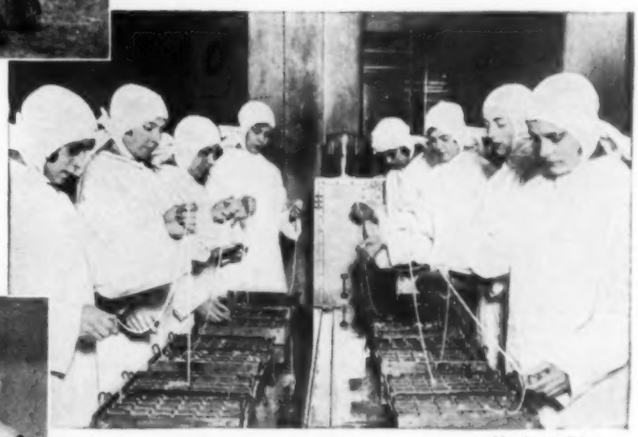


Herbert Photo

These English boys show the latest method of juvenile fencing. Ability to fence is one of the requirements for full-fledged boy scouts of England.

HOSPITAL FACTORY

Catgut for surgical use is prepared by workers in an annex of London Hospital in England. Sufficient profit is made from the sale of the excess material manufactured to support fifty-five beds in the hospital each year. The picture below illustrates scraping, disinfecting and sorting catgut in this unusual hospital factory.



Herbert Photo

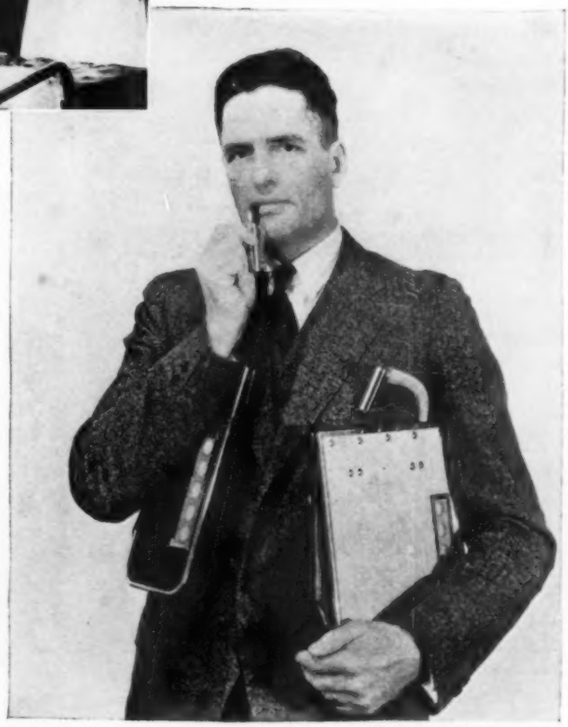
Herbert Photo

WHAT PRICE NOISE?

A device that records the amount of traffic noise endured by hospital patients is the basis of an experiment by Prof. A. M. Low at West London Hospital, Hammersmith.

A NEW "TALKY"

Moving the lips, tongue and mouth as in ordinary speech makes this artificial larynx talk. New and old models were recently compared before the national convention of the American College of Physicians.



Keystone-Underwood

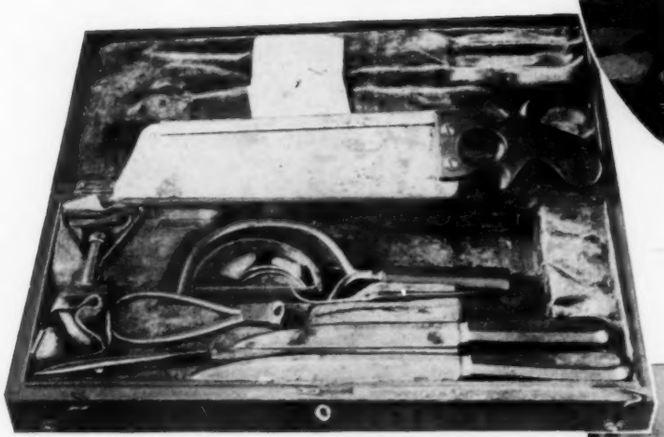
Keystone-Underwood

A MUNICIPAL "LUNG"

A mechanical lung which breathes in air but does not expel it records the amount of pollution in the air by means of a filter paper disk. Dark smudges are left on the edge of the paper and are later compared with a scale of standard shade, as is shown below. The small rubber tubing with the glass projection hangs out of the window of the New York Meteorological Observatory and collects dirt.

The study, under the direction of Prof. David R. Morris, has shown that during the month of January the air of New York was purest at 4 a. m. and dirtiest at 9 a. m. The refueling of furnaces produced this variation.

Keystone-Underwood



Keystone-Underwood

This curious set of tools contains—not the implements of a carpenter—but a set of surgical instruments, reminiscent of eighteenth century days. What a valuable antique!

The disadvantage of being blind did not prove a handicap to Evelyn Raabe, who surpassed persons with normal vision as she ranked highest for Braille System typing in a recent examination by the civil service commission of San Francisco.

Acme

HEALTH and the SCHOOL

Edited by J. Mace Andress, Ph.D., 67 Clyde Street, Newtonville, Mass.

Report Cards—A Check-Up for Parents

ONE of the great problems in connection with health education is to get cooperation from fathers and mothers. Children may be well taught and trained in health in the school, but the school's efforts will carry little weight if the parents do not assume responsibilities themselves as teachers. Children may acquire information at school about the desirability of having milk and vegetables in the diet, but if the home is not sensitive to such needs, little will be accomplished.

Among the questions most frequently asked of health educators are the following: How can we best reach the parents? How can we put into their hands reliable information? How can we stimulate them to take an active interest in the health of their children and work with the school?

It would be too much to say that the public schools and the health department of New York City had solved the problem of parent cooperation, but they are making a splendid contribution, and incidentally they are demonstrating the value of schools and health departments uniting on the promotion of health education. In New York City the superintendent of schools and the commissioner of health decided on a unique plan, that of sending a report card to the parents. This enables the parents not only to check up on themselves but also to get information on important points relating to the health of their own children. A report card for parents, patterned after the one used in New York City, is shown on this page. The back of the right side of the card served for the address of the department of health, New York City. Parents were encouraged by this excellent means to cooperate with school authorities in regard to their children.

The booklets corresponding to the various points to be marked on the report card are as follows:

1. Your Child's Sleep, by Foster Kennedy, M.D.
2. Day Rest for Your Child, by Angelo Patri, A.M.
3. Milk for Your Child, by Henry C. Sherman, Ph.D., Sc.D.
4. Vegetables and Fruit for Your Children, by I. H. Goldberger, M.D.
5. Your Child Needs Sunlight, by Alfred F. Hess, M.D.
6. Regular Bowel Movement, by Oscar M. Schloss, M.D.
7. Cleanliness and Health for Your Child, by Josephine Baker, M.D., D.P.H.
8. Watch Your Child's Growth, by T. D. Wood, A.M., M.D.
9. Protect Your Child from Diphtheria, by Béla Schick, M.D.
10. The Doctor, the Dentist and Your Child, by Shirley Wynne, M.D., D.P.H.

The reader does not need to be told that almost every one of these authors has a national reputation in the field of health education. Many of them have an international reputation as well. Parents have appreciated the offer to supply them with these 4-page booklets, for many thousands of the booklets have been distributed. In addition to the aforementioned booklets there is one entitled, "Vacation Health." It contains suggestions prepared for the use of children during the summer vacation. Incidentally, these

No	Yes	QUESTION	I desire more information on the subjects I have checked in the column to the right	✓
		1. Do you give thought to your child's sleeping hours?		
		2. Do you insist that your child rest EVERY AFTERNOON?		
		3. Do you know how to use a quart of milk a day in your child's meals?		
		4. Do you know why you should give him a wide selection of vegetables and fruits?		
		5. Are you sure that your child gets his share of sunlight (or its substitute)?		
		6. Do you know whether your child has developed the habit of a daily bowel movement?		
		7. Do you know why your child should have clean hands and regular baths?		
		8. Do you weigh and measure your child regularly to know if he is growing as he should?		
		9. Have you had your child protected against diphtheria?		
		10. Do you know why you should take your child regularly to the doctor and the dentist?		
		Count 10 for each check in the YES column. Add. The result is your score.	Send the booklets I have checked above to ..... NAME ..... NUMBER AND STREET ..... CITY	

rules are good for adults to follow to enjoy a healthful summer.

Not every city has the remarkable facilities of New York in enlisting the cooperation of parents in the health education of their children, but every city, town and even school district may do something. What is your school or community doing?

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

FIRST GRADE DOLL HOSPITAL

THE HIGH first grade of Memorial School, Houston, Texas, became interested in making a doll hospital after they had read "Dr. Tom's Doll Hospital," as told in the Silent Reader by Treadwell.

The object of the hospital was to take care of the sick and broken dolls of the children. In demonstrating an interest in dolls, the teachers were able to lead the pupils to see the necessity of caring for their bodies. The pupils became so interested that the result contributed directly to right health habits, a sound body, strong moral fiber and the maximum capacity for happiness, together with efficiency for life's work.

The classroom curriculum is built from the child's actual experiences, and the children themselves make their own reading, language, music and arithmetic lessons. For example, furniture, pillow-cases, sheets and towels are all priced and hand made by the pupils. The building, the dressing of the doll nurses, the cost of the proxy doctors and the expenses in operating the ambulance provide an abundance of daily working material.

The children who are underweight actually go to the hospital; each child is represented by a doll. Keen interest is taken in these little proxy patients. When the child is again normal in weight, the doll substitute is discharged and it is an occasion that merits fresh lessons in the daily program.

On the hospital grounds an ambulance always awaits; when a child from another grade in the building is injured, the ambulance is rushed to that room, a representative doll is brought back and kept in the hospital until recovery is complete. The doll's sojourn is then ended at the hospital, and the account is settled with play money. Children in this way acquire a broad foundation for future contacts.

Health and good citizenship form the pivot about which all the work of this unit revolves. The playground unit and the foods that the children buy in the cafeteria form a part of the health unit. I do not believe it is necessary to go into minute detail with the work of this project as the pictures show clearly the work that has been accomplished in the unit.

The children learned more than 100 new words. Some of these new words were quiet, morals, bathroom, bathrobe, sunshine, scales, doctor, nurse, showerbaths, towels, sheets, pillow-cases, vegetables, janitor, maid, orderly and auditor. Such phrases as hospital zone, be quiet, drive slowly, quiet zone, cripple children and ambulance service were used daily in language stories, reading or arithmetic games.

The consensus was that the major educational results included the following seven points:

1. Healthful care of dolls led to the care of the body.
2. Mastery of fundamentals in reading, language, arithmetic, drawing, music and spelling manifested itself in practical experience.
3. The vocational intelligence doll hospital and drug store served as the basis of the unit of work.
4. Worthy citizenship was found in the care of the dolls.
5. Worthy home membership and appreciation of family life was felt.
6. Use of leisure time was spent in fixing broken dolls and dressing proxy dolls.
7. A moral-ethical standard was established by character appreciation.

While some few children were underprivileged, most of the children had many opportunities and had a good social background. Most of the children were given care and attention at home as well as opportunities to see things.

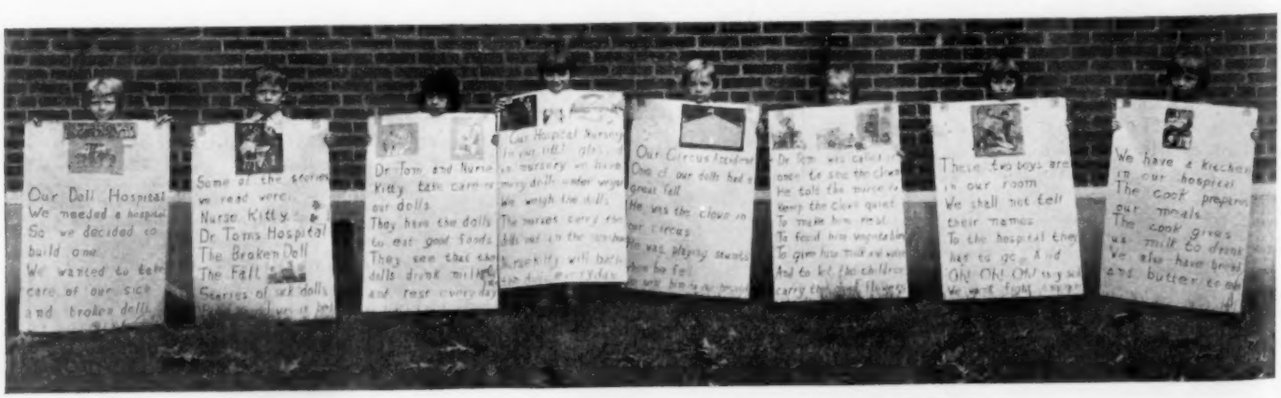
MRS. J. J. TRUITT,
Houston, Texas.

A STUDY OF TRANSPORTATION THAT SAVED LIVES

IN ONE of the middle western states is a hamlet whose only contact with the modern world is the paved highway. This village consists of a couple of houses, a blacksmith shop, and a general store in which the men meet to discuss, over and over again, the battles in which they were engaged during the Civil War.

The school that their children attended is hidden by shrubbery from the highway that curves around the building and its playground. Across the pavement, at the middle of the curve, is the baseball field. In spite of numerous signs for motorists, since the pavement was laid not a year had passed without automobile accidents causing the death of one or more school children or their relatives.

Finally a young teacher decided that if something could be done to impress the pupils thoroughly with the necessity of caution near the highway, lives would be saved. He concluded that the study of the development of transportation might be good for this purpose because through this study the need of accident prevention could be brought out as well as the connection between transportation and well being; the course could be correlated readily with health and all subjects of the curriculum and,



The doll hospital was a keen incentive for written health projects.

furthermore, it was a matter in which every pupil in his one-room school could be interested.

"But couldn't we class it as a study in geography?" he asked his supervisor after outlining his plans. "Parents in my district have no use for 'the new-fangled notions,' as they consider health and hygiene, but they do accept geography." The supervisor agreed that it did not much matter what the study was called, if it served the purpose.

So teacher and pupils began talking transportation in terms of miles in arithmetic classes. For reading lessons they often used interesting articles about railroads, automobiles and other forms of transportation. As writing exercises, younger pupils practiced on safety slogans and older students wrote to insurance companies for information as to accidents and loss of life. They discussed routes in geography and studied transportation in its relation to health, panics, famines and earthquakes in other countries. In history they learned about flatboats, steamboats, prairie schooners, engines and the railroad—forerunners of civilization in the West.

In connection with the English classes the children were soon cutting out pictures illustrating the "Conquest of Time," and pasting them on paper to form a frieze around the schoolroom wall. There were illustrations of the slow vehicles of the earliest days when speed was not important: Egyptians carrying a heavy stone on a pole suspended between two men; pictures showing how the pyramids were erected and portraying the slow means of travel during the centuries afterward. The children learned that it was a simple matter for a person to get out of the way of stone sleds, ox carts, harnessed horses, the Indian on horseback with his load on a pole that dragged on the ground, or the Mexican with his pack on a donkey. Later the steam engine and the automobile, both slow at first, gradually "improved," moving faster to save time. The children decided that an airplane, also, should be included even though it did not move on land. The dirigible, the telephone operator who "talks on a wire" and the radio operator who sends his messages through space were finally added.

Another poster, constructed in the form of a frieze, was labeled in red letters: "Evolution of the Automobile." In the center, at the top, was mounted a picture of Henry Ford driving the first car he completed, in 1893, and below it was pasted a newspaper clipping bearing the following comment: "It was nearly twelve years later that one was sold. The one shown here would run 25 to 30 miles an hour, and Wow! the noise it made." Pictures showing automobiles, from the first rude types up to those of the present time, included the old phaeton style of auto-carriage, the gas buggy with large front wheels and small ones at the back and the "two-seater" in which the riders faced both front and back. One picture showed early models of automobiles going down the street of a small town, with boys shouting and pointing, people staring and dogs barking.

Each child, represented by a doll, went to the miniature hospital to receive the proper medical treatment.

Among the most interesting features of this poster were pictures of famous people and the cars they drove: Mark Twain in his "Merry Oldsmobile"; Chauncey Depew in a "horseless carriage"; Sir Thomas Lipton who sailed fine yachts on the sea and drove automobiles on land, and Maude Adams who scorned a chauffeur for her curved-dash car.

These exhibits were followed by pictures of a racing car, a truck taking a cow to market, an auto moving-van breaking through a snow drift, and a beautiful new sedan.

Of course, with every child in the school rummaging through newspapers, magazines and books for pictures, every family in the district knew about those posters and the discussions that went on about transportation. Not only did the pupils tell at home about the good effects of improved travel, but they dwelt on the responsibility of the pedestrian as well as that of the driver of a car and on the effects of carelessness, on one's self and others.

Consequently, besides acquiring a fund of interesting and valuable knowledge about transportation, these pupils learned that with civilization comes speed and danger, with the need of protection. It was by their own suggestion that boys were delegated to guard the dangerous road before and after school; no child was to cross to the field beyond unless the patrol signified that it was safe.

Not a life was lost that year. Parents as well as children had become so speed conscious that they took better care of themselves, in a community that had been so out of tune with the times that the instructor had not dared whisper, "health education," in connection with his work!

BERTHA STREETER,
Detroit.

PRACTICAL COURSE FOR CAFETERIA WORKERS OF DELAWARE SCHOOLS

WITHIN the last three years the number of school cafeterias in Delaware has increased until there are now approximately fifteen throughout the state. New school buildings are being erected and equipped with up-to-date cafeteria equipment. Since the educators of Delaware were not content with sending children into a school cafeteria to select from a poorly chosen array of food a well balanced lunch, which should give the child the best and the most nourishing as well as the most attractive food for the least cost, there was a demand for trained cafeteria managers and workers. In order to

meet this need, a course of ten weeks was given for cafeteria workers. The completion of this course, consisting of ten lessons, if the applicant passed the examination successfully, entitled the worker to a Trade School Certificate which recommended him for a position in any cafeteria in the Delaware schools.

It is now generally agreed that the school as well as the home has a definite responsibility for the health of its pupils. The nutrition problem is not only one of the home but of the school as well. Who should accept this responsibility at school? The classroom teacher, the home economics teacher and the health supervisor are necessary if an effective program is to be carried on; but the greatest responsibility undoubtedly lies in the cafeteria and its manager.

Since the state of Delaware does not make an appropriation in the school budget to pay trained cafeteria managers and dietitians, in most of the schools the management of the cafeteria is under the supervision of the teacher of home economics, assisted usually by workers who have had no training in nutrition.

To meet the needs of the cafeteria workers of the state, it was necessary to give this course combining into one class all the trained and untrained workers as well as managers.

The first purpose of the course was to meet the needs of the cafeteria problem of the state. Most of the schools outside of Wilmington are located in the town. The consolidated schools bring together the children from the town and the country. Since Delaware is known as an agricultural state, the school has a double problem to meet and solve.

A school of 800 pupils has approximately 400 children coming from the farms. The cafeteria in this school feeds daily about 300 children. Many times the child from the farm brings his lunch, for he does not have sufficient funds to buy his lunch at school; but this child might be able to buy one hot dish, which is so essential to good nutrition.

An unbalanced meal may be selected, no matter how adequate the lunch is in the cafeteria, unless it is preceded by some instruction in the classroom in regard to the proper selection of foods that will contribute to building a strong body and to nourishing it.

If the school has a director of health education, cooperating with the cafeteria manager and the home economics teacher, a suitable unit on nutrition can be planned to meet the needs of the pupils.

Demonstration lessons to train cafeteria managers were held in this school cafeteria of Seaford, Del.

The second ideal was to have better managed cafeterias in Delaware schools. A well managed cafeteria should promote the following objectives: (1) to have an accessible cafeteria with an adequate lunch period; (2) to make the cafeteria as attractive as possible; (3) to serve food hot; (4) to supply food requirements that the child is unable to get at home; (5) to supervise the selection of food after classroom instruction; (6) to have food economical enough for all, and (7) to have an attractive place to relax and be sociable. These objectives cannot be reached unless there is a well trained cafeteria manager. This course in Delaware was planned to meet the present situation in the school cafeterias of Delaware.

The third objective of the course was to train cafeteria workers. After a careful study of the preliminary training of the workers enrolled in the class, the course of ten lessons was planned. These lessons included menu planning, marketing, the management of a school cafeteria, suggestions for salads, soups, main dishes, desserts and mixtures with baking powder and yeast, some suggestions for hot weather drinks suitable to be served in school cafeterias, a demonstration lesson and a general review.

The marketing lesson presented facts to the manager showing that the best food can be bought and served reasonably if precautions are used in purchasing in season large quantities and taking advantage of discounts. Nutritive fillings for sandwiches were also studied, and the process of checking a tray properly was given consideration. Even though the proper food is served, the child may make a poor selection. This necessitates careful supervision, and amazing results may be obtained by using cards in checking the lunch.

With an enrolment of twenty-four pupils, the demonstration lesson was most effectively carried out in the Seaford school cafeteria. Members of the state board of education who helped make the course possible were present to see the accomplishments of the class.

If the expressions of the workers in the class are considered, the state of Delaware will conduct a class next year for the advancement of school cafeterias in the state.

AURELIA B. CATE,
Seaford, Del.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

IT IS almost thrilling to pick up a course of study in health education that is original and genuinely helpful. Most of those that come to the reviewer's desk are mechanical, contain little concrete material and are largely rehashes of other courses of study. Assuredly this book is not a pot-boiler. Every page of "A Course of Study in Health Education for Elementary Schools"[1] shows the most careful kind of thinking and hard work.

Health education is considered from a broad point of view. Before the detailed work of the grades is

1. Pp. 90. Boston: Department of Education, the Commonwealth of Massachusetts.

considered, there is a condensed but satisfactory treatment of such topics as the teacher's health, school medical service, school nursing service, psychologic service, weighing and measuring, midmorning luncheon and relaxation periods.

The section devoted to the principles of health teaching is worth quoting as a whole, but a few sentences here must suffice:

"Health behavior is the main goal of health education. Emphasis should be placed on what the child *does* rather than upon what he knows. . . .

"The approach in health teaching should be positive rather than negative. Emphasis should be placed on *what to do* rather than upon *what not* to do. . . .

"Life situations furnish the setting for health teaching which is timely and welcome. . . .

"Every child should have a chance for success in the health game."

There is one striking innovation in this course of study which should commend itself highly to those who are called on to prepare courses of study. Each of the sections devoted to the habits and attitudes that children should acquire is preceded by a presentation on "Facts For the Teacher."

The pupil references to textbooks suggest definite pages. There is a good bibliography for teachers. The latter part of the book tells about practical activities for health teaching.

Mabel C. Bragg, chairman of the committee that prepared this modern course of study, and her assistants have succeeded in presenting to the teachers of Massachusetts one of the most helpful courses of study on health education that has been written.

WHEN is a schoolroom properly ventilated? How can such ventilation be brought about? These are two questions with which educators and school hygienists have been much concerned. In the final report of the New York Ventilating Commission, "School Ventilation—Principles and Practices," [2] a brief review is given of the history of ventilation and an attempt is made to answer these questions. The major objective of schoolroom ventilation requires a room temperature of from 68 to 70 F., with moderate air movement. The special control of humidity is not essential except in certain northern regions where the humidity is low in cold weather. Present laws requiring a supply of 30 cubic feet of air per minute for each pupil do not have any justification either in theory or in practice. The window gravity method of ventilation is in all instances as satisfactory for schoolrooms as the fan system and generally more satisfactory. This report should be carefully studied by all those who are concerned with the construction and ventilation of school buildings.

THOSE who are fond of history will find Dr. Showerman's "Rome and The Romans" [3] a delightful book full of material which has not been readily accessible to the ordinary student. It is not only a survey and an interpretation of a great ancient civilization, but it also makes the reader familiar with modern Italy. One beholds the Roman as he lived in his everyday life centuries ago.

To the teacher of history who is interested in the health of his pupils and thinks of the development of medicine and hygiene as a legitimate part of history, this book will be a real discovery. The regular teacher of health will find much new material which she can introduce effectively into her lessons.

The chapter on "What He Ate and Drank," referring to the food of the ancient Roman, is especially good, as the following quotation shows:

"We note first that among his foods macaroni was not found, nor the bread and porridge made of Indian corn; and it is probable that his pastries were not the varied product of today, which is native to France and Switzerland rather than Italy. Among fruits, the orange was not the universal thing it is today; the 'golden apples of the Hesperides' of the ancient tales are a proof that the orange was not at home in Italy. Among vegetables we must not think of potatoes and the tomato in ancient Rome. Among meats, beef should be mentioned as not so generally used as in modern times. Among dairy products butter was little used, and the oil of the olive was universal, as it is today. The place of sugar was taken by honey."

It would be a nice problem for a class in dietetics to make a scientific study of the diet of the ancient Roman in the light of present-day knowledge about the balanced ration. The diet of the modern Italian might be considered in the same way.

FEW think of dramatic beginnings in education, yet the first experiment in attempting to teach the feebleminded is as fascinating as a novel. In the latter part of the eighteenth century, after Rousseau had popularized the virtues of primitive man, a wild boy was taken in the woods of Aveyron, France. He was brought to Paris where he was seen by thousands of persons. He proved to be a human being only in shape—a dirty, scarred, inarticulate creature who trotted and grunted like the beasts of the field, ate with apparent pleasure the most filthy refuse, was apparently incapable of attention or even of elementary perceptions such as heat or cold.

Although the boy was pronounced by Pinel an incurable idiot, Itard, a young physician, undertook his education. "The Wild Boy of Aveyron" [4] is the first complete translation that has been published of Itard's report of his painstaking efforts to educate the savage boy. It is a story of rare literary charm and reveals an affection between teacher and pupil. The experiments that Itard tried were most original and ingenious and will give the intelligent reader a valuable insight into the learning process. Although within two years this wild boy had learned to live like a human being, and was clean, affectionate and able to read a few words and understand much that was said to him, Itard regarded his work as a failure. One of Itard's pupils, Seguin, thought otherwise and attempted to train feebleminded children along the principles recommended by Itard. Eventually, Seguin came to America where he was destined to become a considerable influence in the education of the feebleminded.

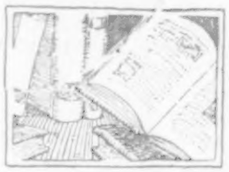
AGAIN the Cleanliness Institute offers to teachers of seventh and eighth grades one of its excellent readers, "The Judd Family," [5] on cleanliness and health. Not only is it valuable from the point of view of health and cleanliness but it teaches much interesting history and geography. The story begins with Matt Judd who lived in a log cabin on the Kennebec River 200 years ago in what is now the state of Maine. The author portrays a vivid picture of those pioneer days and the problems which these courageous pioneers encountered. They had to get their food, make their clothes, keep clean and nurse their sick. The book deals with cross-sections of the Judd family in 1730, 1830 and 1930. The crude methods of making soap and keeping clean give way to more efficient means of housekeeping and civic administration. This reader is one that children will thoroughly enjoy. It is available to all teachers free of charge.

2. Price $1. Pp. 73. New York City: Bureau of Publications, Teachers College, Columbia University, 1931.

3. By Showerman, Grant, Ph.D. Price, $2.40. (School Edition.) Pp. 643. New York: The Macmillan Company, 1931.

4. By Itard, Jean-Marc-Gaspard. Translated by George and Muriel Humphrey. Price, $1.25. Pp. 104. New York: The Century Company, 1932.

5. By Kimball, Alice Mary, and Hopkins, Mary Alden. Pp. 118. New York: Cleanliness Institute, 1932.



New Books on Health

COMMON SENSE AND THE CHILD; A PLEA FOR FREEDOM

By Ethel Mannin. Price, $2. Pp. 314. Philadelphia: J. B. Lippincott Company, 1932.

THE AUTHOR of this book is now 31 years old. At 19, she married and at 20, she had a daughter. She has written novels and psychologic impressions. Now she offers a plea for greater freedom for the child. She does not recognize the existence of the naughty child but only of happy and of unhappy children. She feels strongly that a child should never be forced to wear clothes that he dislikes, and that he should not do anything that he does not like. She objects to the teaching of manners at the table, and her ideas regarding sex are apparently just about as free as those having to do with food. The author apparently has drunk at the freudian fountain and is slightly intoxicated with what she has absorbed.

MORRIS FISHBEIN.

THE YOUNGEST OF THE FAMILY

By Joseph Garland, M.D. Cloth. Price, $2. Pp. 196, with numerous illustrations. Cambridge, Mass.: Harvard University Press, 1932.

AS DR. GARLAND aptly says in the first chapter of this book, "The bearing of a child does not by any means carry with it, as if by divine inspiration, the knowledge of the care of that child or any intuitive judgment as to what may or may not be best for him."

It is Dr. Garland's purpose, therefore, to make as clear as possible the foundations on which health and normal development are based, so that the infant may be guaranteed certain inalienable rights, including not only the right to be well born but also the right to have that wise protection and careful rearing which shall best fit him to assume his place in society and to play his part in the machinery of a human world and in the progress of human kind.

Equipped with the knowledge gained from Dr. Garland's book, the mother of the youngest of the family can, with equanimity and confidence, confront the task of raising him to useful and healthy manhood. Even if the youngest does not happen to be likewise the oldest of her children, she will find the book an indispensable guide, exploding many old superstitions concerning the prenatal period and contributing constructive information on the growth, development, care and training of the child from early infancy through the runabout or preschool age. She will find a complete description of the equipment for the new baby. She will learn what the child should eat and wear as he grows older; what reactions to expect at each age; how to cultivate good habits and discourage or overcome bad habits. She will find tables of growth, tables giving valuable information concerning contagious diseases, and tables enumerating poisons and antidotes; indeed, so complete is the book that she will even discover simple recipes.

In no uncertain terms, Dr. Garland takes his stand on the question of unrestricted child bearing, stating that "the times have changed and it is no longer considered respectable to beget children who are not to be raised and to sacrifice motherhood on the altar of animal child-bearing."

Dr. Garland's contribution to the literature on child care is not faddistic; it is a careful, helpful, sane compendium of knowledge concerning child rearing. It takes an even middle course, disparaging the negligent parent and indicating the error of her ways to the mother who typifies the other extreme, devoting herself to a "debauch of maternal love" during her child's infancy.

From the cover picture of the charming infant, through the text to the piquing questions on the back of the jacket, "The Youngest of the Family" holds and absorbs the interest and repays careful perusal.

LEOLA J. HARRIS.

TUMBLING ILLUSTRATED: OUTLINES AND DESCRIPTIONS OF EXERCISES

By L. L. McClow, B.P.E. Illustrated by D. N. Anderson. Price, $3. Pp. 212. New York: A. S. Barnes & Co., 1931.

THERE IS good material in this book assembled to appeal to teachers of playground work, dancing academies and physical education. The instructions are practical and the illustrations clear and simple. This book should be in the library of any one interested in tumbling or dancing.

MERRIEL ABBOTT,
Merriel Abbott School of Dancing, Chicago.

THE IRON CONTENT OF VEGETABLES AND FRUITS

By Hazel K. Stiebeling, M.D. Pp. 20. Washington, D. C.: Department of Agriculture.

A SYSTEMATIC study of the iron content of the common vegetables and fruits, recently completed by Dr. Hazel K. Stiebeling, senior food economist of the Bureau of Home Economics, U. S. Department of Agriculture, yields data of much interest to doctors, nurses and all concerned with accurate dietary calculations. The results are published in Circular No. 205 of the Department of Agriculture, a pamphlet of 20 pages, entitled, "The Iron Content of Vegetables and Fruits."

In tabular form for the most part, Dr. Stiebeling shows the iron content of 110 different forms, parts or varieties of fruits and vegetables, 82 of which were analyzed by herself. In a comprehensive list she also summarizes her observations by classifying the fresh or succulent vegetables and the fresh fruits on the basis of their iron content into groups ranked as "excellent," "good," "fair," and "poor." On the whole, vegetables outrank the fruits and fruit juices in iron content. The group of excellent sources of iron consists entirely of vegetables. Of chief importance in the group designated as good sources of iron are potatoes and thick, pigmented stalks and leaves. Approximately half of the group called fair consists of fruits; the rest comprise seed pods, blanched leaves, blanched leafstalks, roots and bulbs. The group considered relatively poor in iron consists mainly of fruits.

QUESTIONS and ANSWERS

Electrocardiograms

To the Editor:—Are electrocardiograms always wholly reliable when a cardiac disability is to be determined over a future period of time, or do they simply reveal the condition of the heart at the time of examination? Of what benefit is a cardiogram in determining disabilities when cardiac disabilities vary from time to time, sometimes to a great extent? What is the most accurate method of examination to determine cardiac disabilities in order to arrive at a fair conclusion of disability status, to include the reserve of the myocardium? What relation does dyspnea have to the cardiac functions? F. G. H., Pennsylvania.

Answer.—The electrocardiogram gives chiefly information of the transmission of impulses through the conducting system. As a rule, it tells only the condition at the time of making the record. Often in a perfectly healthy man there will be some unusual change in the electrocardiogram which, if found in a man with heart disease, would have definite prognostic significance. This is true in so-called bundle-branch block.

It is doubtful whether the electrocardiogram alone could determine cardiac disability. Not infrequently one sees serious heart failure without change of significance in the record.

One should always regard the electrocardiogram as an added bit of evidence in diagnosing and prognosing heart disease. It cannot as a single test determine cardiac disabilities. Laboratory aids of all kinds are helpful in many cases in arriving at a diagnosis. One might go so far as to say that there is no pathognomonic laboratory procedure.

Indeed there is no "most accurate method of examination to determine cardiac disabilities." Dyspnea of the kind that is unusual to the person after exercise, that does not quickly disappear after exertion, is the surest single sign that the left side of the heart cannot properly propel the blood delivered from the pulmonary circuit, so that the lungs become congested, with resulting diminution of air space and accumulation of carbon dioxide. Any one who has definite heart disease and can carry on activities short of becoming dyspneic is living within the limit of his decreased reserve, and the prognosis as to length of life will depend on the character of his heart lesion.

Tongue Defect

To the Editor:—The mother of some mute children has a defect connected with her tongue. Can this have any connection with her children's affliction? In your opinion, would an operation on the mother possibly benefit the children? These children are perfectly normal in every other respect. E. W. P., New York.

Answer.—The information furnished is so meager that an intelligent answer is hardly possible. The age of each child and specific information as to whether the mind and hearing of each is or is not normal and whether each is completely, or partly, speechless would be important information. If the speech organs are normal, failure to develop speech in any child may be due to a defective mind, to deafness or to circumstances affecting the behavioristic attitudes of the child.

However, if there are several such speechless children in the same family, born of normal parents, the situation is unusual and calls for expert study.

If the "defect connected with the mother's tongue" causes her speech to be abnormal, her wrong talking serves as a bad example for her children if they are developing speech, but it does not prevent their learning to talk. Moreover, removal of the "defect" of the tongue of the mother might not of itself correct the presumed imperfection in the mother's speech, the correction of which would probably depend on speech training following the operation. The whole situation seems to call for study at first hand.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Anesthesia for Dental Work

To the Editor:—Can you inform me regarding certain drugs that are used to deaden pain during dental work? I have three teeth that have decayed from the gum line down, and they are so sensitive that I do not think I could stand the intensive drilling that will have to be done on them. As they are front teeth, I do not want the nerve killed. Would it be possible to use novocaine on them while the grinding is being done? H. L., Illinois.

Answer.—There are several products and methods used, but the most satisfactory in our estimation would be the use of a local anesthetic or of conductive anesthesia. Conductive anesthesia is sometimes called nerve-block anesthesia. In the case of either local or conductive anesthesia, a solution of procaine hydrochloride (novocaine) is used. When local anesthesia is used, the solution is injected into the gums about the tooth it is desired to anesthetize. When conductive anesthesia or nerve-block is used, the solution is injected into the area of the nerve branches supplying the teeth or tooth to be worked on. Both of these methods have proved acceptable. Much depends on the character of the case as to which one should be used. It is not suggested that an anesthetic should be used promiscuously, but in cases similar to the one mentioned in the inquiry, it would seem justifiable.

Rectal Dilators

To the Editor:—Please inform me as to the value of the rectal dilator, which seems to have an increasing market through the drug stores and catalog houses. A. J. S., Pennsylvania.

Answer.—The value of a rectal dilator is exactly the same as the value of any surgical instrument; it depends entirely on the hands which wield it. Any instrument in the hands of a skilful operator is useful, but the same instrument in the hands of the amateur may do untold damage. In other words, the treatment of diseases, whether of rectal or of other origin, by means of appliances of any description, is dangerous business except in the hands of a qualified physician.

Cancer

To the Editor:—Please furnish me with some information regarding cancer. What I am particularly interested in is information on some fake cures of recent years as well as other cures which have proved to be failures or disappointments. It has been suggested to me by a physician that you may have some data compiled on material of this nature. My purpose in asking you this favor is to use the information in a thesis, "Is There a Solution to the Cancer Problem?" I am a premedical student at the Washington Missionary College.

K. S. O., District of Columbia.

Answer.—The Bureau of Investigation of the American Medical Association has published a pamphlet on "Cancer Cures and Treatments" (price 15 cents, postpaid), in which some of the most glaring fakes in this field are exposed. The Bureau can also furnish information on other alleged cures that are not at present dealt with in the pamphlet.

As to the scientific treatment of cancer, this is confined to the treatment and removal of the cancerous growth, either by surgical operation or by x-ray or radium in suitable cases. No remedy to be taken internally has proved of any value whatever in arresting a cancerous growth.

As to the possibility of the discovery of a real cure for cancer, other than that obtained by surgical intervention, there is a considerable difference of opinion among medical men. Some, entertaining definite theories as to the nature of cancer, are rather hopeless that a cure will be discovered; others believe that out of the enormous amount of research being done on that subject at the present time there is likely to be developed new knowledge which will lead to a discovery of a cure other than removal of the growth.

One thing is quite certain. The widespread publicity which has been given to the importance of early removal of a cancerous growth has much increased the chances of successful treatment in these cases, especially in cancer of certain parts. In cancer of the breast, for example, a few years ago the surgeon did not expect more than 20 or 25 per cent of the patients with cancer who came to him to remain permanently free of the disease after the removal of the growth. This was because the patients came too late. Today, on the other hand, when a great many patients with a lump in the breast which is not cancerous at all consult a surgeon, the early cases are detected and the growth is removed. As a result, surgeons report as high as from 70 to 75 per cent of cases in which the cancer does not return within five years. This period is usually regarded as the time that warrants claim of cure.

Paranoia

To the Editor:—I wish information on the causes and symptoms and possible chances of cure of the mental disease known as paranoia. Can you recommend a detailed article on the subject?

E. P. S., Virginia.

Answer.—Paranoia is characterized according to Kraepelin by the furtive development, resulting from inner causes, of a lasting, immovable, delusional system that is accompanied by the complete retention of clearness and order in thinking, willing and acting. The essential picture of paranoia is that of a delusional state which is systematized, in that all the delusions have a certain logical connection. Although the delusions are often meaningless and unsupported in fact, usually they are based on misinterpretation of things observed and experienced, as the delusion that when one yawns it is a significant signal that the patient is recognized and some one is warned of his presence. Memory is usually good. No sensory falsifications appear. Orientation is normal, and the mood is related to the character of the delusion. According to Kraepelin it occurs most frequently after the thirties. It is always chronic. It develops slowly and the condition is incurable.

Climate

To the Editor:—Please advise what climate would be best suited to one having had three nose operations for polypus, with still another to follow? Would San Bernardino, Calif., or Denver be among your recommendations as a healthful climate in treatment of this trouble? R. P., Iowa.

Answer.—The question of climate for persons who have diseases of the nose and throat is one that seems impossible to answer in general terms. Certain individuals do better in dry climates, and others in moist. There are some who seem to feel better at high altitudes and others who improve at sea level. It is difficult, if not impossible, to predict which will be most beneficial in a given case.

Southern California and Denver, as well as New Mexico and Arizona, have been found by certain persons to have satisfactory climates.

The patient's own physician, who is familiar with the condition, is in a better position to answer this question than any one else.

Adhesions

To the Editor:—I should like to to know whether there is any method of curing postappendiceal adhesions. I had a pus case of appendicitis ten years ago that ended in adhesions. Four years later I had an operation for their relief, and the trouble seemed gone for four years, but for the past two years I have been much troubled, especially if I take any unusual exercise. The pain is directly under the scar and indicates that the intestine is adhering to the abdominal wall. I have been told that a slow dissolving coating might be applied to the raw surfaces or that the intestine could be sewed to one side of the wound with catgut that would absorb later. I shall be glad to know the latest developments in treating this trouble.

C. J. W., Alabama.

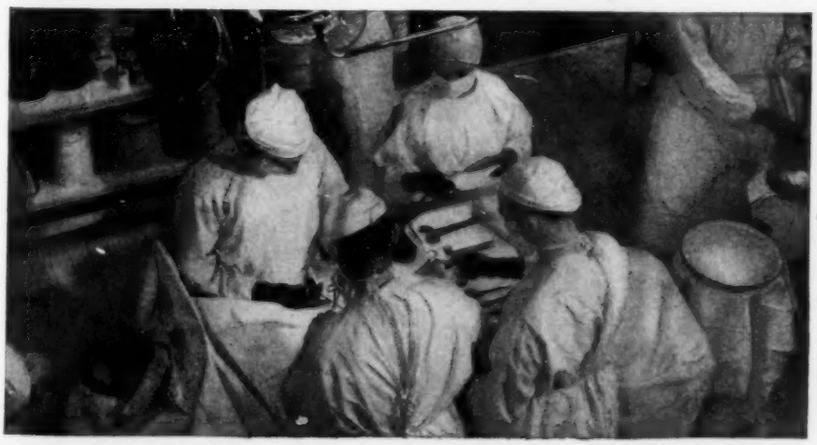
Answer.—The question of abdominal adhesions that develop after cases of appendicitis, and of other similar inflammations of the abdominal organs, has always been a great problem for the surgeons. Many of the symptoms which are often ascribed to adhesions really have nothing to do with them and are due to other things. Operations for adhesions seldom accomplish anything good unless there is an actual or a partial obstruction of the intestine caused by bands of adhesions which by their position interfere with the normal passage of the intestinal contents. In former years, repeated operations were often performed to relieve the patient of vague abdominal complaints supposedly caused by adhesions.

Experience has demonstrated, however, that patients are seldom benefited and are often made actually worse by such operations unless there is a definite obstruction of the intestine which can be relieved. Moreover, it is well known that many patients have extensive abdominal adhesions without any symptoms resulting from them. Recently, a method has been proposed of preventing adhesions or of minimizing their development by the use of the fluid that surrounds the unborn fetus in the uterus. This is one of many substances which have been proposed from time to time to prevent the formation of adhesions after operations. It is still too early to be sure whether this newest procedure will be as efficient as some of the claims which are made for it. In a particular case an x-ray examination of the intestine can sometimes show whether or not an operation is likely to be of benefit. The patient should discuss this matter with the family doctor to obtain additional information.

In the *Washington Emergency Hospital*— one antiseptic serves three vital uses

1 *Gargling* 394 nose and throat cases received treatment in the Washington Emergency Hospital last year. In this type of case, Hexylresorcinol Solution S. T. 37 is used by the staff because of its great antiseptic power combined with non-irritating properties.

2 *Dressings* Hexylresorcinol Solution S. T. 37 is on every dressing carriage in the Washington Emergency Hospital—for use in wet dressings, for cleansing and irrigating wounds. It is highly germicidal, yet it causes no pain, is non-irritating.



3 *Operations* 4,083 operations were performed in the Washington Emergency Hospital last year. In all cases Hexylresorcinol Solution S. T. 37 is kept on hand and is used in certain types of cases for application to the wound during operation.

STARTING 60 years ago as an emergency center for the treatment of accidents and injuries, today the Emergency Hospital is one of the largest in the Capital—with 225 nurses and 17 doctors in daily attendance; 100 private rooms and a total number of beds for 280 patients.

Brilliantly staffed . . . splendidly equipped . . . it has a record of 19,251 patients treated last year.

For gargling, for wet dressings, for operations, the efficient antiseptic, Hexylresorcinol Solution S. T. 37 (1:1000) is part of the standard equipment.

A modern antiseptic which commends itself primarily for its great germ-destroying power combined with entire safety, even if swallowed. And, secondly, for its great gentleness in use . . . Hexylresorcinol Solution S. T. 37 causes no pain in wounds, is non-irritating to wound tissue or to mucous membranes.

Completely reliable for home use

The active ingredient of Hexylresorcinol Solution S. T. 37 is 70 times more powerful than carbolic acid! Yet this solution is so safe it can, and should, be used freely in your own home. These claims have been found acceptable by the Council on Pharmacy and Chemistry of the American Medical Association.

Keep this safe, effective antiseptic right within reach of your children's little hands. Teach them to pour it instantly into their cuts and scratches. Show them how to gargle with it at the first sign of a cold or whenever the throat is irritated.

For intelligent antiseptic care—buy a bottle of Hexylresorcinol Solution S. T. 37 today. Made by a pharmaceutical house of recognized high standing with the medical profession. At all druggists in the United States and Canada—50¢ and $1.25.

Made by SHARP & DOHME

HEXYLRESORCINOL SOLUTION S.T. 37

Most of the 5000 people who died last year from one particular form of cancer could have been saved if they had been warned in time of their impending danger — *and had acted without delay*

LAST year in the United States alone there were more than 5,000 deaths caused by rectal cancer. Had these cancers been discovered in their early stages, a large majority could have been operated upon successfully. Almost all of them could have been found by competent physicians making *thorough* physical examinations.

Either false modesty on the part of a patient who should be utterly frank and truthful with his physician, or disinclination on the part of a doctor to urge his patient to have only the most complete and searching examination possible—one or the other—may cause suffering and tragedy.

There are thousands of cases of unsuspected rectal cancer. In the beginning, they are usually painless. The first slight symptoms are often disregarded. They may be so similar to those of other ailments that only by a conscientious local examination can any doctor determine whether or not a cancer is present.

Irregular or abnormal conditions should be reported to and investigated by your doctor without delay. The discovery of rectal cancer in its early stages should not cause undue alarm. In most cases such a cancer can be removed with entire success.

The United States Army and Navy Medical Divisions, leading newspapers, magazines, the foremost doctors and health officials all over the country urge complete, periodic physical check-ups. It would be impossible to estimate correctly the amount of suffering such examinations prevent and the years of life they add.

A partial examination is valuable as far as it goes. But it is, after all, a compromise not to be tolerated if you wish to guard yourself in every way possible from needless loss of health due to unremoved growths or uncorrected impairments.

Everybody should have a health examination at least once a year—and it should be *complete*. Get the protection which medical and surgical science can provide.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, PRESIDENT ~ ONE MADISON AVENUE, NEW YORK, N.Y.

Breast Abscess

To the Editor:—I am 27 years old. Shortly after the birth of my baby almost three years ago, a nasty breast abscess developed that necessitated lancing and frequent opening up, requiring a month to heal. The scar that it left frequently worries me but, since we are now living a great distance away from the doctor who took care of me at the time, I have as yet not gone to see a physician in this part of the country. A week or ten days before my menstrual period, a lump about the size of a navy bean develops under the scar. Almost the whole breast becomes extremely painful to the touch; this condition lasts for probably a week and then clears up, only to return again. Is this a usual condition under the circumstances? R. W. J., Wyoming.

Answer.—This condition should be kept under a doctor's observation. While painful, it is not essentially dangerous. The frequent lancing of the old abscess has left considerable scar tissue which, in its puckering, may have involved a small portion of the glandular tissue of the breast. It is not unusual for the breasts to be tender a week before or just prior to menstruation, but a lump should not form. Sometimes a glandular tumor develops in the breast, even when there has been no abscess previously, and this, too, would swell and be painful with menstruation. Such swellings should be cured even if operation is necessary. Only an examination at this time could determine this; hence a doctor should be consulted.

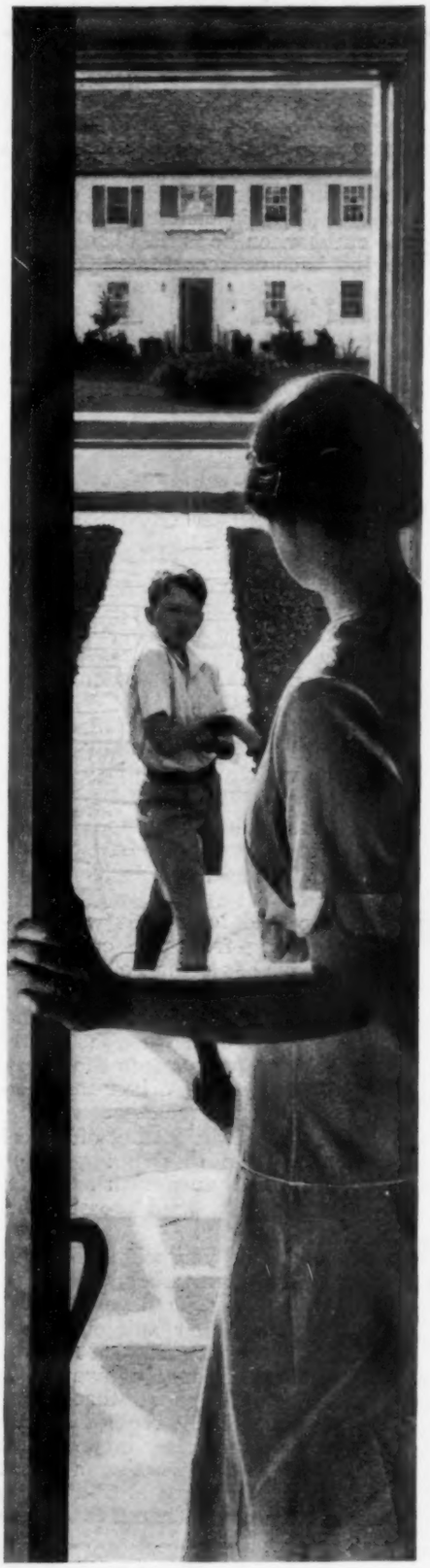
"Substitute" for Insulin

To the Editor:—Please let me know whether "Cellasin Tablets no. 1" would be all right to use and whether it would be beneficial in the treatment of diabetes. I now take 40 units of insulin and if I could, by taking Cellasin, cut down the insulin to 20 units, it would be a great help to me financially. A. S., Tennessee.

Answer.—We do not know of any medication that will take the place of insulin. If 40 units of insulin daily has been prescribed, the inquirer should continue on that amount instead of attempting to cut down the dosage to 20 units by taking "Cellasin." Cellasin is a proprietary preparation manufactured by the Cellasin Company of Buffalo. It contains, or is supposed to contain, a sugar-splitting ferment. We do not know of any one who has attempted to use this preparation in the scientific treatment of diabetes.

"...It's all right, Mother"

And perhaps it is, but yet—



HIS wrist is badly swollen, still boylike, he insists it's all right—just a sprain. Perhaps he is right, but maybe that sprain is a fracture.

Why, in these times, should days be wasted waiting to see? X-rays give decisive proof if there is a fracture... locate the position of the fragments... give the physician invaluable information for successfully setting the bones.

Thus, it is as important to have sprains x-rayed as it is to have obvious fractures. Such precaution makes it possible for correct treatment to be carried out to avoid permanent injury or deformity.

* * *

MODERN preventive medicine is depending more and more upon x-rays. The complete health audit now includes radiographs of the chest, the teeth, and any other parts or organs that may be under suspicion. In this way, disorders are detected in their very earliest stages... at the time when they can be corrected.

Every member of the family —from grandchild to grandparent should have an annual health audit. And in such examinations, the information which x-rays alone can provide should be carefully considered.

A new booklet, "X-rays and Health," has just been published by the Eastman Kodak Company. The part which x-rays play in keeping you well is fully discussed. It will be sent to you free on request. Merely mail the coupon.

— — — — — — — — —

EASTMAN KODAK CO., *Medical Division,*
357 State Street, Rochester, N. Y.

Gentlemen: Please send me your free booklet, "X-rays and Health."

Name.....

No. & St.....

City & State.....

HAVE A HEALTH AND X-RAY EXAMINATION REGULARLY

THIS TAB
protects
THE PURITY OF BABY'S FOOD

WITH this new Hygeia Nipple, your fingers need never touch the sterilized inside surface of the nipple. Just grasp the tab and slip the nipple on or off in a moment!

This new nipple is just one of the sanitary features of the famous Hygeia Nurser . . . the Nurser endorsed by nurses and physicians. Used in more than 2000 hospitals. The wide-mouthed bottle is easily cleaned, easily sterilized, easily filled. The Hygeia Nipple is shaped like mother's breast.

GUARANTEE: Each Hygeia Cell is guaranteed to withstand all temperature changes encountered in its regular use. Any defective Cell will be promptly replaced.

Hygeia Nursing Bottle Co.
Buffalo, N.Y.

Hygeia
THE SAFE NURSING BOTTLE

SUMMER ROUND-UP

(Continued from page 711)

difficulties. Many maladjustments in adult life may thus be prevented.

"The diet and mode of living suitable for the child one year may not be the most satisfactory one for the child a year later; and if all is well with the child the average parent derives great satisfaction from knowing that such is the case. The doctor, on the other hand, having examined the child while he was well, can better evaluate his observations if he is called on to treat the child when he is ill. The child, having become accustomed to visit the doctor on friendly terms while in good health, will not be terrified into protests if subsequent illness necessitates the ministrations of the physician."

"You win, Doctor," said Betty's mother, "I'll be seeing you next year."

HALF OF ALL HIGHWAY ACCIDENTS HAPPEN TO PEDESTRIANS

During the past year, approximately 50 per cent of all highway accident victims were pedestrians. Practically the same percentage has been maintained during the first three months of 1932.

A Pedestrian's Code of Safety is suggested by the National Safety Council which, if followed, will save many lives this year:

1. Cross at intersections only and always use crosswalks. It is inconvenient at times, but it is always much safer.

2. Stop and look both ways before stepping from the curb. Be sure the way is clear before crossing.

3. Heed the traffic officers and traffic signals. Even then look carefully before stepping into the street. Some irresponsible driver may fail to note the signal change.

4. Be careful in getting off street cars. Look before stepping down, even if there is a safety island. Be doubly cautious when crossing behind a street car.

5. Discipline yourself to be alert at all times. Remember, the pedestrian always comes out second best.

6. Be just a bit suspicious of all drivers. The fact that 33,000 people were killed on our highways last year is ample proof that many drivers are wholly reckless, indifferent or otherwise incompetent. It is hard to tell whether a driver is careful or careless until after the accident occurs. Then it is too late.

Health and cheerfulness make beauty.—*Cervantes.*

Schools and Camps

Schools and Camps

BROPHY COLLEGE HIGH SCHOOL
Jesuit Fathers, Phoenix, Arizona
Accredited to State University. Classical four years' course, stressing debating, dramatics, character building, religious training. Buildings and equipment new. Campus 25 acres. Location: Phoenix: modern state capital. Climate during school year: dry, bracing, little rain, no fog; clear desert air, wonderful sunshine (84%). Maximum outdoor life; excellent table; athletics for all. **Address: The President.**

FORK UNION MILITARY ACADEMY
Fully accredited. Prepares for college or business. Able faculty. Small classes. Supervised study. Lower School for small boys in new separate building. Housemother. R. O. T. C. Fireproof buildings. Inside swimming pool. All athletics. Best health record. Catalog 35th year. Dr. J. J. Wicker, Pres., Col. N. J. Perkins, H. M. Box H—Fork Union, Virginia.

Schools for Backward Children

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*
220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

<> TROWBRIDGE TRAINING SCHOOL <>
Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

Schools of Nursing

ENGLEWOOD HOSPITAL Be a Nurse. Three year course. State accredited. Beautiful nurses' home. Full maintenance and monthly salary. Four year High School course required. For further information, write to Englewood Hospital, 6001 South Green Street, Chicago, Illinois.

▼

"—AND IN WHAT SCHOOL WERE YOU TRAINED?"

That is the inevitable question when one applies for a professional position. Nursing is no exception. The standing of the school counts. In arranging the announcements of nurses' training schools, the greatest care has been taken to include only schools connected with hospitals of standing. All hospitals on this page are on the hospital register of the American Medical Association. They provide **"TRAINING THAT COUNTS."**

▲

A Thrift Light!

A few cents a month pays the electric bill for all the current consumed by a 2-watt NEON GLOW LAMP —even if you burn it all night. Makes perfect night light. Lasts thousands of hours. In stock at your electrical dealer's. Write for folder. General Electric Vapor Lamp Co., 845 Adams St., Hoboken, N.J.

IRON CAN BE FURNISHED IN FOODS AT EVERY MEAL

Iron is found in many different kinds of food and the average person's needs can be supplied in liberal servings each day of two foods which are rich in iron, plus the smaller quantities that occur in most other common foods. Certain foods are rich in iron. For breakfast, whole grain cereal, especially oatmeal and whole wheat cracked or crushed are good sources. Stewed prunes and dried apricots are good. Eggs and whole wheat bread or toast also contain concentrated iron. Molasses furnishes a good source of iron.

Lean meats and vegetables are the chief sources of iron for other meals. The greens—turnip tops, beet tops, chard, dandelion, mustard, collards, watercress, spinach, kale and dried beans and dried peas—top the list for iron content.

Of desserts, the custards and puddings made with eggs are richest in iron, but stewed apricots, stewed prunes, raisins, and apples baked with molasses furnish iron, as do some of the fresh fruits also. Blackberries, blueberries, quinces and raspberries are best for iron.

The best sources of iron in meats are to be found in the liver, kidney, brain and heart.

This information, disseminated by the United States Department of Agriculture, enumerates food substances rich in iron though low in cost.

SUNBURN THOUGH STYLISH IS PAINFUL

Though the summer tan may be fashionable, sunburn is painful, is the warning of the *U. S. Public Health Service.* The summer sun should be particularly avoided between 10 a. m. and 3 p. m. Exposure to the sun of a skin that has been protected by clothing all winter should be a gradual process. From five to ten minutes in the sun when one's skin is unaccustomed to exposure is enough. If this amount is increased by five or ten minutes daily, the skin will obtain a light brown color. Blondes, especially those with red hair, fail to tan but always burn. Such persons must protect themselves from the sun's rays. Young children also burn easily, and severe sunburn may result fatally. In fact, severe blistering by the sun of one third of the body often has a fatal result. At all times, the head should be protected from direct sunlight and the eyes protected by dark glasses from glare.

WEARY WITH WORK AND WORRY?

COME BACK FAST!

TAKE THE TWO-A-DAY WAY

FINISH the day with pep to spare. Go to *sleep* when you go to bed. Drink Borden's Richer Malted Milk cold at the fountain to build your energy. Drink it warm at night, made with milk, to settle your nerves and promote sleep.

You will find Borden's a real help. This is why... Exhaustive tests made by a great university prove that Borden's is rich in those precious vitamins A, B and G—rich in the identical vitamins and other food elements that so definitely promote energy and sound nerves!

Drink Borden's at the fountain. Buy the Home Package, too. Try the two-a-day way for two weeks—see how much better you feel. The coupon below with 10c will bring you a liberal trial package, and a valuable booklet.

Borden's Richer Malted Milk

Borden's Richer Malted Milk

GO TO THE FOUNTAIN THAT DISPLAYS THE BORDEN DIAMOND

THE BORDEN COMPANY
Dept. 19-D
350 Madison Ave., New York.
Enclosed is 10c (stamps or coin) for which please send me 3-serving sample of Borden's Malted Milk and booklet.

Name_____

Address_____

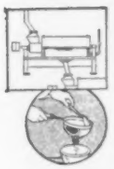
City_____ State_____

Does your baby enjoy these advantages?

MORE than the saving of time and effort which they mean to you each day—these special features of Gerber preparation are important because they are *better for baby.*

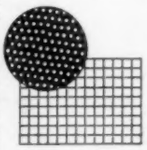
1. When you prepare baby's vegetables, do you use ordinary market produce which may be days—even weeks—old? The Gerber Products are cooked under laboratory conditions while they're still crisp and garden fresh.

2. When you cook vegetables at home, vitamins are destroyed by oxidation. In the Gerber scientific autoclaves maximum conservation of vitamins is effected.



3. The difficult straining process at home further destroys the vitamin values. Gerber Vegetables are forced through a monel metal strainer with oxygen excluded, and valuable vitamins conserved.

4. The Gerber monel metal strainer is five times as fine as the ordinary kitchen sieve. It removes indigestible fibre that has no food value for baby.



5. When the water in which a vegetable has been cooked at home is poured away, it carries with it valuable mineral salts. The Gerber cooking process, and the vacuum pans used for bringing the products to uniform consistency conserve all important mineral values.

After the Gerber Products have been strained and sealed in steam washed cans they are subjected to a temperature which is past the thermal death point of any harmful bacteria that might be present. This is the process which preserves the products indefinitely.

ACCEPTED AMERICAN MEDICAL ASSN.

More than 84,000 physicians have examined the Gerber Products. Ask your doctor about them.

Free Booklet

Mail the coupon for booklet which describes the Gerber Products in detail.

Strained Tomatoes
Beets - Peas - Vegetable Soup - Carrots - Green Beans - Spinach - Prunes

15¢ *at grocers and druggist*

Gerber's STRAINED VEGETABLES

GERBER PRODUCTS COMPANY, FREMONT, MICHIGAN

Please send me free copy of your booklet "Baby's Vegetables and Some Notes on Mealtime Psychology."

Name.....

Address.....

REACTIONS TO MODERATE ALTITUDES ARE SLIGHT

The nature and the extent of the reaction to high altitudes depend not only on increased elevation but on rapidity of ascent, length of residence at high altitude, amount and degree of exertion, physical fitness and mental attitude. Dr. James J. Waring writes of the effects and after-effects of residence at moderate and great heights, in the *Journal of the Outdoor Life.*

To acute oxygen want, that is, sudden lack of oxygen of more or less high degree, man reacts by a train of characteristic symptoms that the English and the Americans call mountain sickness. To sustained oxygen want, which results from long residence at a high altitude, man reacts more or less insensibly by physiologic changes initiated almost immediately but not completed all at once, these changes extending over weeks and perhaps months. The changes involve compensatory adjustments in respiration and circulation. They affect the lungs, circulatory apparatus, blood, kidneys, liver, tissues and brain, and lead finally to that stage of physiologic equilibrium that is called acclimatization. On Pike's Peak the ability to hold the breath is half that at sea level.

The reactions to moderate altitudes are extremely slight, and the readjustments to living again at sea level must be, therefore, also slight. In fact, a cure of tuberculosis at a moderate altitude (up to 6,000 to 7,000 feet) is as durable after return to sea level as a cure made at sea level.

MILK DEMANDS MORE ATTENTION DURING SUMMER

"The summer time is the healthiest period of the year for modern peoples because man made it so," is a statement from the *Illinois Health Messenger.* However, the problem of safeguarding milk is seemingly far more difficult in summer than in cooler seasons. In fact, out of thirty-seven milk-borne outbreaks recorded in the United States during 1931, all but four took place during the late spring, summer and early fall. Since perfect prevention of contamination is extremely difficult, a certain line of defense lies in pasteurization. If the milk has been pasteurized and is subsequently kept cool and handled with care, the possibilities of contamination from that source are eliminated.

Early ideas are not usually true ideas.—Spencer.

For the Young MOTHER

Designed to allow for the development of the expectant mother, this Camp Support (No. 3011) is especially made to meet the needs of the young woman who is to become a mother for the first time. It provides proper uplift to the organs and sacroiliac support as well as symmetrical body lines. Endorsed by leading physicians.

Write for special information.

CAMP

Physiological Supports

S. H. CAMP AND COMPANY
Manufacturers, JACKSON, MICHIGAN
Chicago 1056 Merchandise Mart — New York 330 Fifth Avenue

THUMB SUCKING

Quickly and Safely Stopped by Most Approved Means

SAFETY THUMB GUARDS

Send $1.75 for a pair with full directions. State Age of child. Satisfaction guaranteed or money refunded.

The Safety Thumb-Guard Co.
Dept. H, New Haven, Conn.

The A.P.-UPLIFT

U. S. Pat. 1,702,922 —Invented by Mme. Poix to create the stylish upward contour; to relieve pain and remove cause of many bust troubles; also for pre-natal and nursing periods.

Sizes 30 to 44
Pink Repp.....$1.00
Pink Tussah Silk... 1.50
Pink Mesh or Jersey 2.00

If not at dealers, order direct giving exact bust measure next to skin. Booklet free on request.

G. M. POIX, Inc.
103 Madison Ave.
New York, N. Y.

If Your Child Could Explain to You

what helps him to behave rightly, you would never have a moment's trouble with him. Reading this sane, pleasant little booklet by two trained specialists is almost the same thing!

"Training the Child to Obey"

by Smiley Blanton and Margaret Gray Blanton

15c

Paper Cover, 22 pages

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

Youth's most precious possession—Health

Vacation calls for an abundance of energy, and mothers do not wish to allow their children to pick up undesirable between-meal "bites." Horlick's solves this problem and offers an energy-building food that children love—and it stimulates the appetite, too.

Horlick's THE ORIGINAL **Malted Milk**

ACCEPTED AMERICAN MEDICAL ASSN.

No cooking—just a moment to prepare, or handy to carry in a thermos bottle.

Give your child a glass of Horlick's at meals, in mid-afternoon and just before going to bed, and note the improvement in his strength and energy. Send the coupon below for a weight chart and watch the record of his rapid progress.

Horlick's Malted Milk comes also in Tablet form—wonderfully convenient to carry golfing, hiking or on canoe trips.

HORLICK'S MALTED MILK CORP.
Dept. H-18, Racine, Wis.

Please send me ..... weight charts for pre-school children and ..... charts for school children for recording by a graph the weight progress of individual children.

Enclosed is 25c for which please send me a Ration Tin of Horlick's Lunch Tablets.

☐ Natural flavor

☐ Chocolate

(Sufficient nourishment to sustain one person for 24 hours.)

.....

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.....

GROUP PROJECTS BRING SUCCESS TO PLAY ACTIVITY

The possibilities for summer playground activity cover a wealth of material. In fact, as the playground movement has progressed, certain cities have become known for special types of recreational activity. In Houston, Texas, the square dance has been revived and has become so popular that it is not unusual to have an attendance of 2,000 persons. A playground flower show is a big attraction and holds especial interest for little gardeners of Dalton, Mass.

Provided the playground program is diversified enough, special projects add spice to long summer days. All-day hikes, playground music, story telling, handicraft work, reading, puppet shows, pageantry, flower shows, parades, track meets, contests in rope jumping, ping pong and kite flying, and popular sports such as indoor ball, volley ball and baseball are particularly adapted to playground activity.

Many more persons will frequent the municipal playgrounds this summer than ever before because of the present depression. Playground programs are built on activities that have been successful in some other community. These suggestions, offered by *Recreation* magazine, have been successful in other cities and on other playgrounds. Incorporate some of these ideas into your play program.

WOOD TICKS ARE CARRIERS OF MANY DISEASES

Wood ticks have been recognized as carriers of rabbit fever, tularemia, typhus fever and, more recently, of Rocky Mountain spotted fever. Persons who are in charge of summer camps and recreation grounds are advised by the department of health of the state of Maryland to cut the undergrowth along paths and especially along the approaches to bathing shores.

Dr. R. H. Riley, director of the state department of health, has said: "Everybody who has ever had any experience with them, will agree that wood ticks are pests, and that even when they are not sources of danger they cause great discomfort. But since it has been found that certain kinds of ticks may also be carriers of the germs that cause certain diseases, they have been given a definite status as insect enemies and . . . there is a very real reason for waging war against them."

Rocky Mountain spotted fever is not confined to the West. The state of Maryland reported twenty-three cases last year.

HAY FEVER MISERY relieved by soft disposable tissues

USE KLEENEX instead of irritating damp handkerchiefs

HAY FEVER SUFFERERS—don't irritate your nose with a rough, damp handkerchief. Use Kleenex instead. These soft, silky tissues are a great comfort, wonderfully soothing.

Kleenex is much more absorbent than cotton or linen. It is always soft and dry, because you use a fresh tissue every time! What a relief to be rid of soggy handkerchiefs! Rid of washing them, too. Kleenex is so inexpensive it's destroyed after one use.

Ideal for children

These soft, sturdy tissues are ideal for children's handkerchiefs, for baby bibs. Kleenex now comes in two sizes. The new large package contains tissues three times the usual size . . . handy for dusting and guest towels. For a sample of Kleenex, write the Kleenex Co., Lake Michigan Building, Chicago, Ill.

'KERFS

. . . are a formal version of Kleenex . . . exquisite tissues, smartly bordered . . . 4 thicknesses instead of 2. Nice enough to appear as "regular" handkerchiefs or tea napkins.

KLEENEX *disposable* TISSUES

PADDLING SUPERSEDES STREET ACCIDENTS

A child had been badly hurt in an automobile accident on the streets of Madison, Wis. Although occurrences of this kind are not unusual, each parent of Virginia Terrace, a residential district of that city, realized that this might easily have happened to his child. As a result, a common cause—the safety of children in the streets—has banded some thirty families of the terrace into an organization. Out of this came the idea of prohibiting all children from playing on the street.

There was only one drawback. When parents weren't looking, the children played in the streets. But the Virginia Terrace families struck directly at this when they agreed that any father or mother who caught his own or a neighbor's child playing in the street not only could but would be expected to paddle the child and send him home. The plan has worked better than was ever expected, and not only has the neighborhood been thoroughly imbued with the safety idea but the plan has brought the families of the community together to such an extent that on every holiday the street is roped off and the whole group enjoys a gay picnic, *Public Safety* reports.

INSTITUTIONS DESERVE FRIENDLY NAMES

It is not only poor psychology but a reflection on the progress of science and medicine to use the term, "home for incurables." This term shows little consideration for the feelings of patients and their friends. Such terms as these are used by men who work at the desk rather than at the bedside of the patient. Moreover, some of the incurable patients of yesterday are the curable patients of today and it is therefore reasonable to expect that some of the incurable patients of today will be the curable patients of tomorrow.

This term is not the only offensive one. A list may easily be compiled to include "cancer" wards, "insane asylums," "charity" hospitals, sanatorium "for consumptives" and "poor house."

For example, "the department of social welfare" is far better than "department of charities"; a ward for "diseases of the chest" is better than for "consumptives." *The Modern Hospital* suggests the need of these changes, in a recent editorial.

A sane mind consists in a good digestion of experience.

—*Clifford Allbutt.*

TAKE A
DeVILBISS
WITH YOU

Take a DeVilbiss Atomizer with you this summer. Fill it with an antiseptic solution approved by your physician. Spray your nose and throat after long, dusty drives. Use it to guard against uncomfortable summer colds. DeVilbiss Atomizer No. 18 is especially designed for traveling use, as it is non-leaking in any position. Ask your druggist for one.

DeVilbiss

★ ★ ★

The DeVilbiss Company, Toledo, Ohio, headquarters for atomizers and vaporizers for professional and home use.

Accepted by the Council on Physical Therapy of the American Medical Association.

Try Shopping Among HYGEIA Advertisements

"MOTHER won't worry now"

Your children are safe in the water with a genuine Miller

STAY-A-FLOAT

Patent applied for

FILLED with Private Estate Japara Kapok, four times more buoyant than cork, the Stay-a-Float is dependable safety. Brings ease of mind to parents. Punctures will not harm because not inflated. Helps teach children to swim. Safety in canoe. Endorsed by physical instructors. Approved by Parents Magazine and Child Life.

Gay, fast colors—red, green, blue, white, orange, olive drab. Adjustable shoulder straps, strong webbing ties, rust-proof buckles. Repeated use will not injure. Just dry in the sun.

Four sizes—No. 0 for ages 2 to 4. No. 1—4 to 7. No. 2—7 to 12 years. No. 3—12 to 15 years. Price, $2.00 each. If your dealer can't supply will send postpaid. Specify size and color.

The American Pad & Textile Co., Greenfield, O.

Makers of Life Save Vests for Adults, Life Save Cushions, Sleeping Bags and Sun-Mat Beach Rolls

The American Pad & Textile Co.
Dept. P, Greenfield, Ohio.
Enclosed $..... ($2.00 each) for STAY-A-FLOAT. Sizes ..... Color .....
(Write name and address on margin)

SUPERIOR CHILDREN NEED SECURITY OF BALANCED FRIENDSHIP

The little girl who threw ink from a classroom window onto a teacher walking below and admitted her guilt is the same child who submitted the following poem as a daily lesson:

HEAVEN

I went to church one day, and God sat by my side,
And we laughed at the preacher and people with their prayer books
Saying prayers to a God so far away.
"Heaven is pearl-paved," said the preacher, "and gold,
And the angels sing His praises on their harps.
It is there that you and I will some day go."

And God laughed and said to me,
"Heaven is a broad field and a brook.
And the lean, scarred, beaten horse
And the houseless cur and the hunted deer
Will go there with Me."

What should be the attitude of the teacher or parent to a child who wrote such poetry and later threw ink from the window? It was necessary first with such a precocious child to consider the child's total personality picture. She was small, somewhat frail and looked 11 though she was 13 years of age. Her mental age was 18 years. The parents were of high intellect and her home life was exceptionally good. The child went to a progressive school and advanced as rapidly as was good for her.

She was not, however, fully accepted by a mischievous group that she admired. After a kindly talk with the girl, the teacher was told that the 13 year old had no deliberate desire to hit the teacher with the ink. And when asked why she did it, she revealed: "I wanted to know what it would feel like to be bad. I have never been bad."

From this the *Journal of the National Education Association* derives three points in an examination of personality adjustment of the superior child:

1. The environment must give the child an opportunity to make proper use of his superior abilities and to attain satisfaction through using them.

2. He must have an opportunity to see that individuals with types of ability different from his have a definite part to play.

3. The group atmosphere should be kindly and provide for him a feeling of security so that he will not build up snobbishness as a defense mechanism.

To ease the task of enlightenment

This message is sent to parents and guardians—in a spirit of constructive helpfulness

THIS year—some five million young girls between the ages of 10 and 14 will face one of the most trying situations in all the years of young womanhood.

This year—some five million mothers will face the most difficult task of motherhood.

Thousands of these mothers will sit down in quiet rooms—and from that intimacy so characteristic of today's mother and daughter—there will result that understanding so vital to the daughter of today—the wife and mother of tomorrow.

There will be other thousands of mothers—courageous—intimate in all things but this. There will be thousands too timid to meet this problem—and it will pass—but with what possible unhappiness...what heart-breaking experience.

To free this task of enlightenment from the slightest embarrassment—the Kotex Company has had prepared an intimate little chat between mother and daughter. It is called "Marjorie May's Twelfth Birthday."

In this book—the subject has been covered completely . . . in simple understandable form. It is accompanied by a simple plan affording the child complete privacy.

To secure a copy without cost or slightest obligation parents or guardians may fill in and mail the coupon below. It will come to you in a plain envelope.

Mary Pauline Callender HY-8
Room 2100,
180 N. Michigan Avenue, Chicago, Ill.
Please send me a copy of "Marjorie May's Twelfth Birthday."

Signed.....

Street.....

City..... *State*.....

IRON CHLORIDE SOLUTION IS GOOD TREATMENT FOR POISON IVY

It is the sap of the poison ivy plant that injures the skin when a person comes in contact with it. Glandular cells, pouring a secretion of resinous sap into the large canals and into the tiny veins of the leaves, are really responsible for poisoning.

For those who are unfamiliar with the plant, James B. McNair offers the following description in *Safety Education.*

"Poison ivy is easily distinguished by its compound leaves of three leaflets. Its flowers, which appear late in spring, are clusters of inconspicuous greenish-white bloom, followed by waxy white berries. The poison ivy has two principal habits of growth, being either shrub-like or climbing. . . . The height is usually from one to three feet, though in rich moist places it may reach four or five."

The poison penetrates the skin by means of the sweat glands, the oil glands, the hair follicles or even the surface of the skin itself. In from twelve hours to a week after contact with the plant, a reddening and an itching are noticed. In severe cases, blistering may result. In about another week, this condition disappears and the injured skin starts peeling.

Iron chloride is an effective remedy when it is used in the early stages. Iron chloride to the extent of 5 per cent in a half-and-half mixture of alcohol and water is used advantageously before and immediately after one goes into a region known to contain poison ivy or its kindred plants, the poison sumac and poison oak.

The effects of ivy poisoning on the skin are much like those of a burn, and the treatment suggested resembles that successfully used during the war in cases of burns. The affected parts should first be bathed with iron chloride solution, to neutralize the poison. Then the skin is dried, and melted paraffin is painted over it. A thin sheet of cotton is laid over the wound, and this also is covered with paraffin. The affected area is thus protected from the air and from rubbing, and new skin is given a chance to form. Mr. McNair suggests this treatment for cases in which ivy poison has definitely developed.

The enforcement of the Federal Pure Food Laws costs the American public but one cent per person per year. It ought to be worth that to reduce the chances of being poisoned.—*Farm Journal.*

The Fun of the SUMMER OUTDOORS

is often spoiled by

PAINFUL SUNBURN and WINDBURN

NIVEA CREME

Protects the Skin

Nivea* Creme provides efficacious lubrication, protects, soothes and smooths the skin. No stickiness or after-greasiness. No interference with work or play. Send coupon for a sample tube.

* Trade Mark Reg. U. S. Pat. Off.

P. Beiersdorf & Co., Inc., Dept. H-8
200 Hudson St., New York, N. Y.

Send me without charge a trial tube of Nivea Creme.

Name .....

Address .....

The new importance of bran in the diet

DURING the past year, a series of laboratory experiments have given new values to bran as an article of diet. These scientific investigations show bran as an important source of two things indicated in common constipation.

Bran is one of the best sources of cellulose — needed to exercise the intestinal muscles. In addition to this "bulk," bran furnishes Vitamin B, which helps tone the intestinal tract.

The "bulk" in Kellogg's ALL-BRAN has been made finer, softer, more palatable by special processes of cooking, flavoring and crumbling. Within the body, it absorbs a large amount of moisture, forming a soft mass which gently clears out the intestinal wastes.

Yet Kellogg's ALL-BRAN is not simply a bulk-carrier. Its "bulk" is less than 8 per cent of its composition. The remainder is food-materials—carbohydrates, protein, fat and mineral salts.

ALL-BRAN, for instance, provides twice the assimilable iron of an equal amount by weight of beef liver.

Except in cases of patients who have a highly sensitive intestinal tract, or who suffer from intestinal conditions where the use of any form of bulk would be inadvisable, ALL-BRAN may be safely used.

Kellogg's ALL-BRAN may be served either as a cereal, or cooked into fluffy bran muffins, breads, omelets, etc. Made by Kellogg in Battle Creek.